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# THE ARCHITECTURAL FORUM



FEBRUARY  
1920

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*"Beautiful Birch  
for  
Beautiful Woodwork"*

# *Beautiful* **birch**

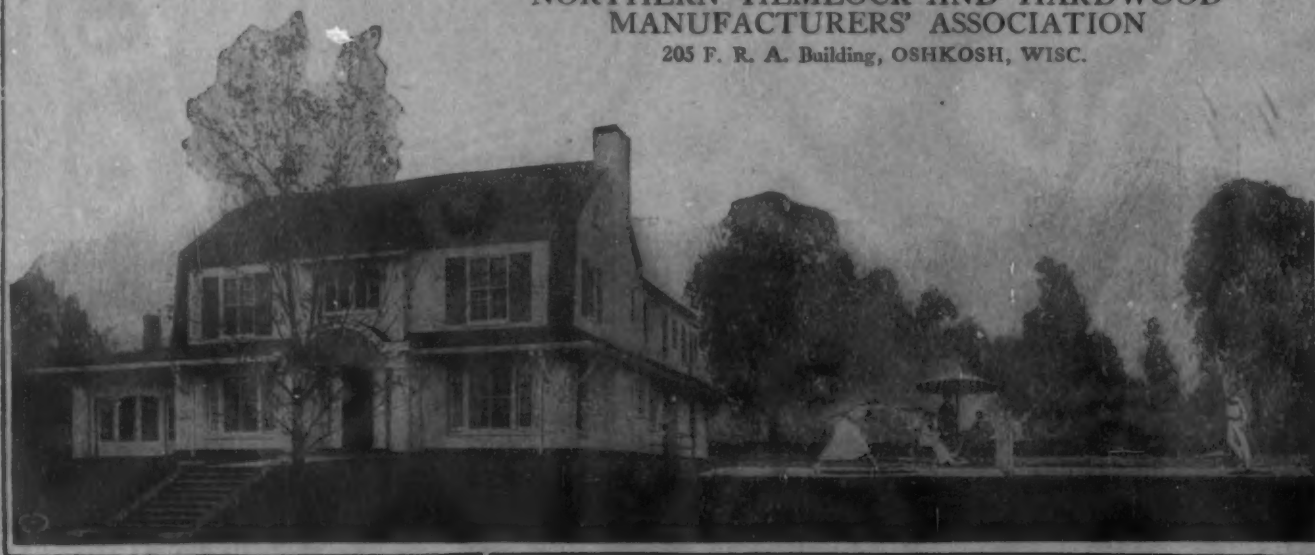
With housing occupying so prominent a position in every discussion of building matters it is well to focus on birch, the wood supremely adaptable to the small or medium sized house.

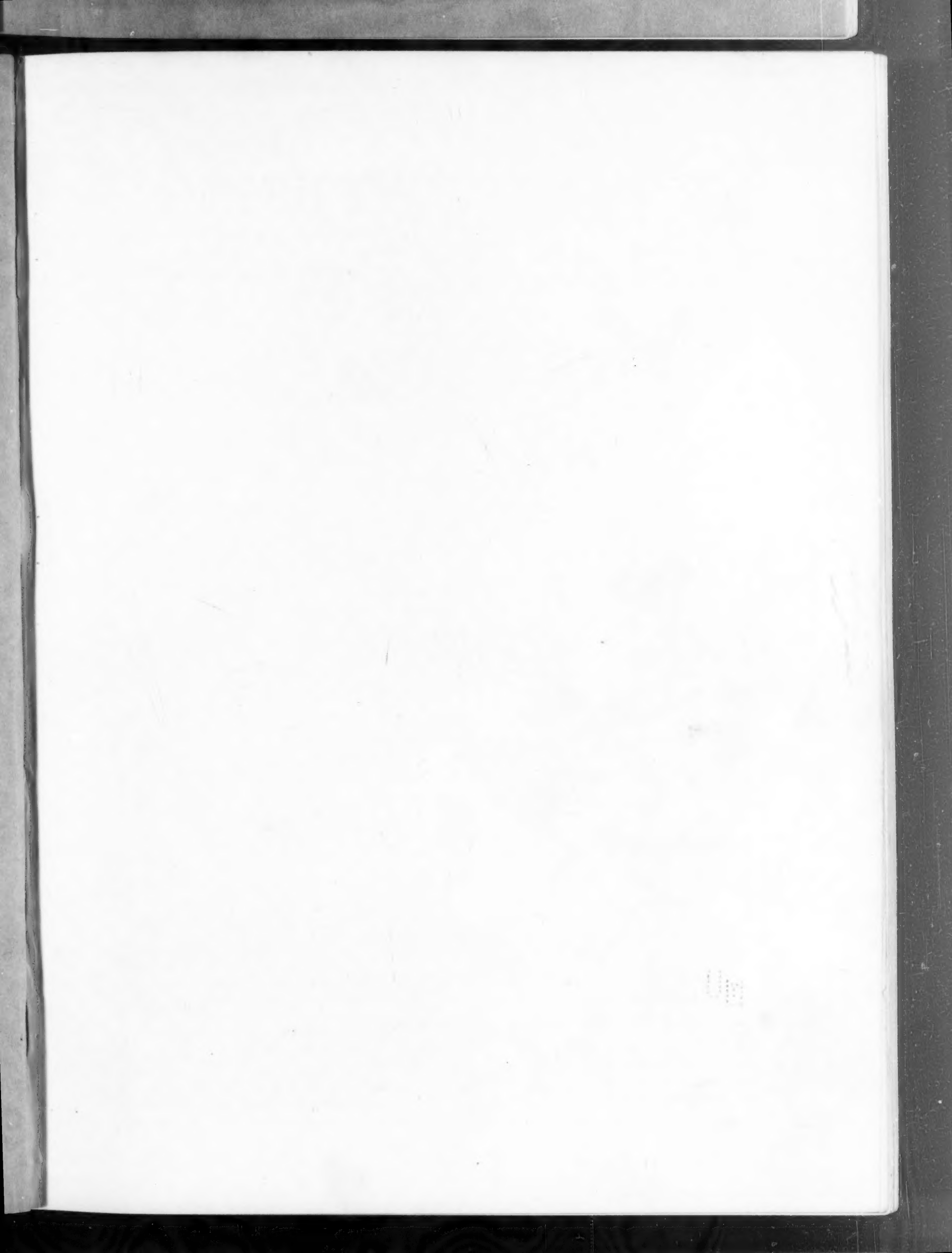
Birch is beautiful in itself, it is hard, non-absorbent, strong, durable and stays wonderfully well in place whether in trim, veneer or furniture. It receives all finishes equally well and is particularly valuable as a ground for enamel, which it holds very permanently.

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PENCIL SKETCH OF A GATEWAY  
BY O. R. EGGERS  
John Russell Pope, Architect



# The ARCHITECTURAL FORUM

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## Does Architecture Need a Salesman?

By EMERY STANFORD HALL, A.I.A.

DOES Architecture need a salesman? Note the term—"Architecture"—not the Architect. It must be borne in mind that there is an important distinction between the term "architecture" and the term used for identifying the profession which designates its members as architects. It is likewise essential that the terms be clearly defined. Architecture is the outgrowth of human need—the record of human desire. It is the manuscript by which we are able to read the souls that have lived and passed beyond. By it there are revealed the ideals, the aims, the aspirations of the peoples of the past. Architecture is the pen and ink and paper in the hands of the recording angel of the present. By it a knowledge of our civilization is made available for generations yet unborn. Is the motive of our action mean and narrow and selfish, or is it noble and liberal and magnanimous? It is alike recorded in enduring stone and fire-touched plastic clay. Architecture also is "the science and art of constructing and designing buildings"; the peculiar language of an age or people sometimes defined as "style of structure," but more properly defined as a style of human expression through material. In conclusion, then, is not architecture both the science and art of discovering, meeting and also the expressing of human need? Surely architecture is not mere material—such as brick and wood and stone—neither is it iron and glass, yet it is through the intelligent use of material that architecture performs its mission.

Does Architecture need a salesman? Let every preconceived notion be laid aside and let careful examination be made. Let there be no confusion of issue. The architectural welfare of the community is of far-reaching importance; it is vital to best existence. It is too essential to the paramount interests of the race to have its interest confused with those of a few little fellows who call themselves architects and use architectural practice as a means of livelihood. The world might dispense even with a Vitruvius or an Angelo; it has forgotten many of equal attainment; but the human world cannot dispense with Architectural

Expression, neither can it dispense with the Science and Art of Building. For expression is an instinctive function of mankind. To deny expression to attainment would be almost equivalent to the destruction of ambition. Could there be faith or hope, certainly not love, without expression? While to build is only second in importance to the finding of food, it is essential to the preservation of food.

Does Architecture need a salesman? Is the salesman essential to public service? Can this medium be dispensed with? What is meant by the term "salesman"? Broadly stated, the term "salesman" has come to mean any medium of sale. Formerly the salesman was merely an advocate. His chief duty was to make sales—it was up to the house to hold customers. With him accuracy of statement was unimportant. It was up to the salesman to get orders signed; let the house take care of credits. What did it matter if the customer did buy goods unsuited to his trade, or that were useless for the purposes for which they were purchased? The salesman had made a sale and performed his full function. Ethics of salesmanship? Three words—"get the business." But now all of this is changed and a new philosophy has been worked out. To-day the accepted theory of the salesman's duty is quite different. To-day the good salesman searches for the consumer that would be benefited by a use of the wares of which he is charged with sale. He then proceeds to educate carefully the prospective customer to a sense of his real need, and in this campaign of education he bases his propaganda on provable facts. While the producer nominally pays the bill, the salesman's new code of ethics recognizes that in the last analysis it is, after all, the ultimate consumer that does and must pay all costs; and if the consumer pays the cost of salesmanship, then he is entitled to a kind of salesmanship which will give to him a corresponding return on his, the consumer's, investment. It will be seen, then, that from a useless camouflage the salesman has become a very important link in the chain of organized society. Specialization—that product of civiliza-

tion which has taught the individual that he can serve self-interest better and at the same time contribute most to the interests of the community in which he lives, if he will perfect himself in certain definite lines of endeavor — has increased the mutual dependence of individuals. The time was when the individual, or at least the family or tribe, was sufficient unto itself. In those primitive times salesmanship was not an important factor. Each individual was able to discover and solve his own needs. To-day such independence is impossible. Specialization has made individuals so interdependent as to make co-operation essential to existence. Corporate organization has assumed such an important place in present-day economy that corporate methods of handling business are coming to be universally adopted. In former days, sales were perfected through personal acquaintanceship and by general reputation. Modern processes of business have largely eliminated these methods, and to-day every organization of any consequence maintains its scientific purchasing department; likewise the determining factors in purchase are coming to be very generally understood to be cost and quality.

Does Architecture need a salesman? It is evident that society must find means of expression through architecture. It is equally evident that, under modern complex society organization, it is impossible for the individual himself to make that expression or to be informed as to where he may secure assistance in the promulgation of that expression. But the same law which has robbed the individual of the power adequately to express his needs, on account of his having concentrated his entire energy on a single line of special endeavor, has robbed him of the ability to seek out and find the assistance which he needs. He must, therefore, have recourse to the expert service of the salesman whose specialty is carrying information as to product from the producer to the consumer. Now if the public has become so dependent on the services of the salesman as to be unable to provide for its wants without the assistance of the salesman, then if the producer would reach the public, the producer must employ a salesman; and, further, if the product produced is of such character as to be essential to the welfare of the consumer, then it becomes a positive duty to present the product to the favorable consideration of the consumer.

Does Architecture need a salesman? Does society need architecture? Of course society needs architecture, and it needs it worse than ever before in the history of civilization. It needs architecture, and to have adequate architecture, it must make use of specialized individual service; but

since it has no means to seek out and find that service, except through the medium of the salesman, it follows that the salesman must be provided, else will society suffer.

Does Architecture need a salesman? Yes, architecture needs a salesman, and it is the duty of architects to provide one. Will architects shirk a plain duty to their fellowman? Mr. Sidney Webb, in an address before the Royal Institute of British Architects, among other things, said, "I hope I am not saying anything too hard, but practically the brain-working professions began as the body servants of the rich, and they have not yet sufficiently realized that it is their duty to have developed out of that to become the servants of the community; they have not yet managed to make their service available for the whole of the community which needs their service." Mr. Webb's clear, succinct statement referring to the beginning and early practice of the professions is a most apt statement of the case as it applies to the early history of the practice of architecture; but it is likewise true, to a large extent, with reference to present-day practice. Architects have been slow, in common with members of other professions, to come to a full understanding of their duty to the community. This sloth, in the fullest appreciation of community obligation, while operating against the best interests of the community, has also tended to bring this and the other professions into disrepute. No single class of society can long disregard its plain duty to the community without suffering a lack of that public confidence which is so essential to the highest degree of efficiency in service.

Architects had the confidence and patronage of a considerable clientele which gave them a certain degree of material prosperity: a prosperity which befuddled their reasoning capacity to such an extent as to allow them to come to believe that they were secure in their aloofness from the common need. A false security which they are now beginning to realize through seeing much patronage towards which they had assumed proprietary rights going to others. How have architects acquired these notions, and what has brought about the change, can best be studied by an analysis of the development of Western civilization during the last century.

America has been passing through a more or less chaotic state. Society has not been well balanced; leveling influences have not been fully developed. There has been lack of perspective. These conditions have been fruitful ground for the development of dominant individualism. Enormous individual fortunes have been able to grow in a night. Many have suddenly found themselves



possessed of great wealth without the culture essential to its wise use. This lack of culture, on the part of the principal patrons of the professions, has operated against wise choice in the selection of professional assistance. It is not strange that a class which has acquired large wealth without a long, meritorious struggle would be inclined to judge their professional advisers by the same standards that had obtained in their own advance. Men without balancing culture, who had won wealth by sharp tricks or by chance, found no difficulty in convincing themselves that they were made of some superior sort of clay. It was so easy, why any one with brains could be rich, see what I have done; and the converse, any one that is not rich, or does not operate on a large scale, must be lacking in mental capacity. In face of these conditions the so-called professional man said, "What is the use?" "Bluff" is the word. In the presence of such ignorance, how could the architect be expected to obtain recognition of real merit in service? It was sure to be the architect who could show the largest and highest buildings; the biggest office force; and the richest clients who would be preferred with such a clientele. Technically meritorious performance and equipment did not enter into consideration. The rich man wanted an architect as smart as himself, and to determine this, looked to his, the architect's, seeming material prosperity, not to his technical worth. Now, of course, competent architects know that it requires less dexterity in practice to plan skilfully and supervise the erection of a stereotype skyscraper office building than it does to work out correctly the complicated and much involved details of many a building of very inferior magnitude; but neither the rich client nor the public understand this, and for that reason, while willing to pay largely for small service on a big project, were unwilling to pay even a living fee for large and very valuable service on small projects. This attitude on the part of the employing public has tended to divorce the architect from much service where the exercise of his best skill would be of inestimable public value. The factory and the housing problem demand the finest skill of the most diligent and perfectly trained architects; but since the simplest work pays the largest profit, and complex work of small magnitude pays little or no profit, the latter class of work is not sought by the salesman architect, and cannot be assumed by the professional architect, without serious peril to his economic existence. It may be observed that in the profession of medicine, the physician is able to make his rich patients pay the bills of the poor, and he is able to live on the average. In architectural practice the salesman architect secures all of the highly

profitable business, and leaves the professional architect the complex and difficult middle magnitude work where there can be only a mere living fee with no surplus for the service of the poor. Therefore, the poor get no service, for the salesman architect neither has the disposition nor the ability to render such service, and the professional architect, despite willingness, because of economic limitations, is unable to render gratuitous service. Now the principles of economics make it perfectly clear that no service, no matter how desirable, can be rendered to the public without the public paying a living remuneration to those rendering that service, and since no remuneration for any sort of service can be secured from a democratically governed public, except that public is first convinced of the necessity and value of that service, and since it requires the medium of salesmanship to convince the public, then would it not seem that it is a public duty on the part of the architects to employ a salesman in order that the poor, as well as the rich, may have the gospel of the value of architectural service preached unto them?

Looking at this question from another angle: within the last few years material changes have come about in society structure. Socialistic propaganda is beginning to have its effect; the world war, through which we have just passed, was but an echo of these teachings. We say we have fought to make the world safe for democracy. "Down with the Kaiser," does not mean the elimination of the Prussian Royal Household or even of the Prussian Military System — it means, to a considerable extent, the death of dominant individualism and the preeminence of class or vocational socialism, not general socialism. The people are done with kings either of property or nations, and have found that by organizing themselves, so as to have control of an essential commodity, they can force wealth to its knees. Projects of magnitude will no longer depend for execution upon the will of the rich; but the small man, by joining himself with others, will be able to dictate the success or failure of almost any project. From a strictly selfish standpoint, therefore, it behooves the architect to curry favor with collective small folk. Now these small folk are too numerous to be cultivated in the same fashion as was so effective with the rich man. Trained in the school of adversity, these folk have learned to judge men on intrinsic worth. They want to know the possibilities of performance. They are being influenced less and less, as the years go by, by the flummery of social prestige and the glamour of tawdry display. What they want to know is what service they can secure that will be of greatest benefit to them. In place of selecting their



professional adviser through personal acquaintanceship, or even directly at all, they will have recourse to the use of some system of collective bargaining. An expert corporate purchasing agent or a collective buyer will be the medium of contract for service, and service will be rated on that person's idea of its economic value. Under these conditions only those who employ the services of the skilled salesman can hope to present adequately the value of professional service. Since no architect, who can show the highest degree of technical skill in his profession, can possibly be possessed of either time or sufficient skill as a salesman to present adequately his case to the expert purchasing agent representative of a class of collective bargainiers, it becomes plainly evident that the architects must, eventually, make use of the expert salesman if they would preserve their identity as a class. For in case they do not make use of such salesman service to convincingly present their claims for consideration they must expect the function which they now perform to fall into the hands of other classes less fitted for that service, but classes which are now making the largest use of expert salesmanship, particularly the great contracting and engineering corporations, which are nothing more nor less than aggregations of brain workers who make use of highly perfected and unusually skilled sales organizations. With longer training and superior attainment, architects need not fear the competition of the so-called engineering and contracting corporation, provided they are willing to lay aside the dignity and prejudice which has grown out of the necessity of generations of individual patronage on the part of the rich and the powerful, and make use of modern sales methods. There should be no confusion in understanding. In no sense is it advocated that the architect himself should become a salesman. Either he would be a very poor salesman or a very poor architect; and since merit in commodity is essential to the exercise of the best skill in salesmanship, the architect must devote his entire energy to perfecting his technical skill in order that the salesman may have a good case to present.

Does Architecture need a salesman? If so, and it seems that the case is pretty well proved, how is this need going to be harmonized with the established ethical codes? Professional codes proscribe advertising in any form as unethical and prejudicial to the best interests of a profession; yet advertising is the handmaiden of the salesman, for commercial experience clearly demonstrates that honest educational advertising is an essential factor in salesmanship. Is it time, then, to do away with established codes, wipe the slate

clean, and start over again? Is it expedient for the individual architect to employ advertising in laudation of his individual attainment? It hardly seems so—there were well founded reasons which led originally to the promulgation of the code. These reasons have not been eliminated. All professional service is personal service, and laudatory reference to it by the producer is equivalent to personal boasting, often rated as exaggerated egoism, and a practice which is always objectionable. Since it is difficult, if not impossible, to escape this objectionable feature in the presentation of the merits of the service of a single individual, it would appear that the only way open to the accomplishment of desired results is for the profession to present its merits to the public by the employment, through its professional societies and associations, of salesmen or organizations who will present the merits of architecture and the necessity of making use of the assistance of expert practitioners. This method of procedure will, no doubt, necessitate radical changes in architectural practice. Practice will need to be brought up to a uniformly high standard, for if individual merit is to be advocated collectively, then all of the individuals forming the collection must at least have attained minimum standards of qualification for service. The problem of adjusting to new conditions is necessarily complex. It cannot be undertaken hastily; it needs serious thought and constructive criticism.

Conceding that good architecture is essential to the welfare of all, then the public must be made to know what is for their own good and by continuous reminding not allowed to forget. Recent events serve only to prove that it is not sufficient for the public to know its needs, but it must always have those needs forced to its observing attention. Witness the report of the Hughes' Committee on Soldiers' Benefit Insurance, a large percentage of the policies lapsing, not because of lack of funds to pay premiums, nor because of a lack of knowledge as to the value of insurance, but because the men were not continuously followed up and impressed with their duty, as in the case of private insurance where salesmen are paid premiums for keeping policies in force.

These observations force the conclusion that all architects should become members of local and state societies, and either directly or through affiliation with local societies, members and supporters of the American Institute of Architects, and this society should be provided with funds and institute a nation-wide educational campaign for the purpose of acquainting every one with the essential value of architectural service.

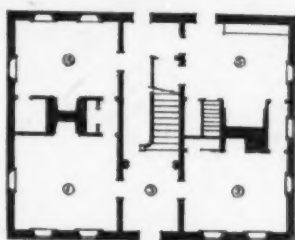


## Early American Domestic Architecture

I. WENTWORTH-GARDNER HOUSE, PORTSMOUTH, N. H.

MEASURED DRAWINGS BY EDWIN J. HIPKISS

THERE is much to be learned from a study of eighteenth-century American houses in which the exterior and interiors have been permitted to remain through the years substantially as they were designed. There was in all of them a marked consistency of treatment in the exterior design and the interiors which cannot be said to hold true in the work of our own day. This in some measure may be accounted for in that our idea of the Colonial style centers about details, with the result that we overlook the larger matter of general composition. Much of the data available is of fragmentary nature — details of many different buildings designed at different times — and in assembling them for use in modern structures the unity that is so typical of the original buildings is often lost. There is special interest, therefore, in such an example of the style as is illustrated here — with that provides an opportunity of examining the various parts of a single building, all dating



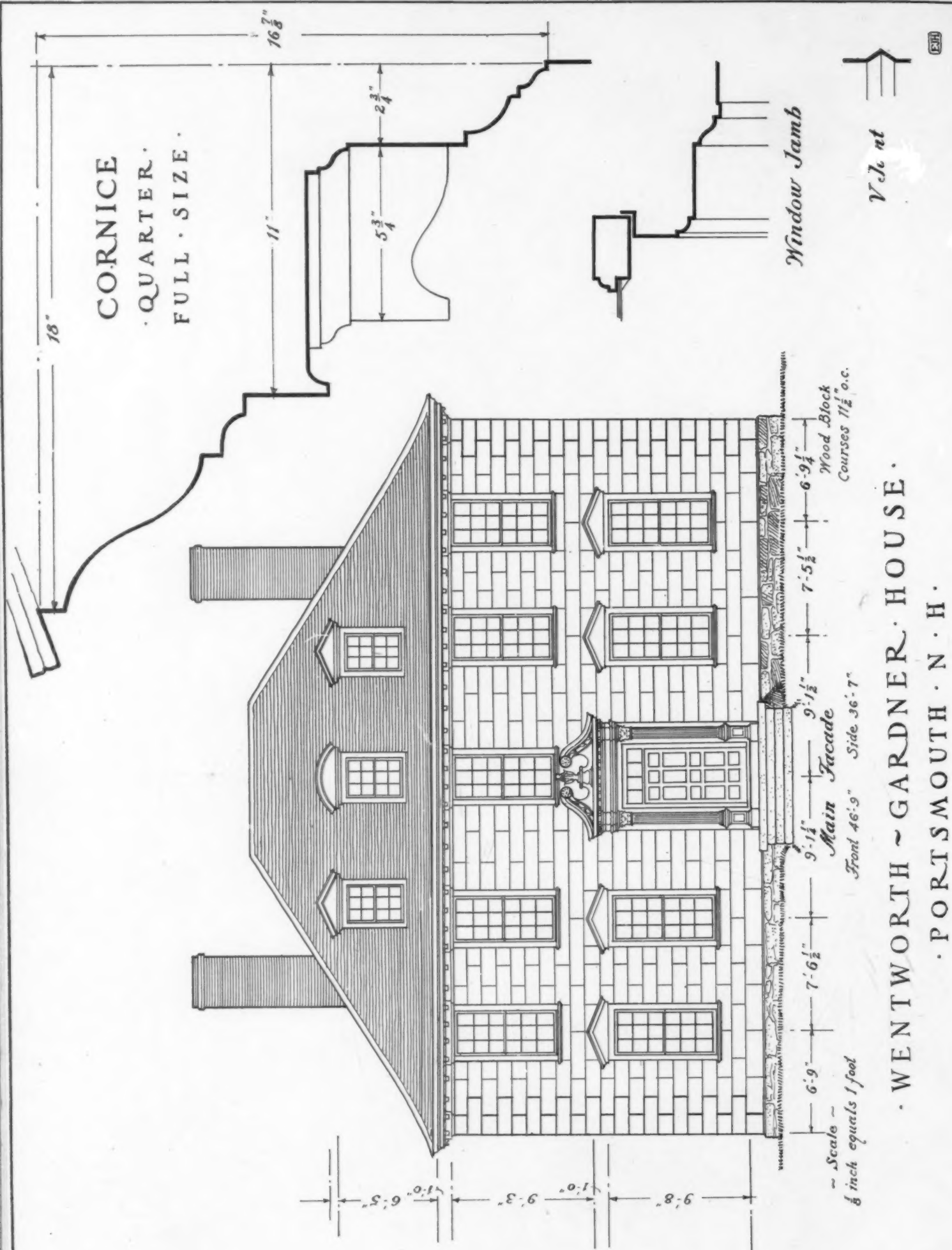
Main Floor Plan

back to the same period. It is also of value and interest in showing a reflection of the Georgian architecture of England from which our Colonial forms were devised.

The house was built in the third quarter of the century and completed about 1761. The whole exterior is characterized by excellent

fenestration and general proportion. Direct Georgian influence is seen in the windows, which are of the same size in both floors. The detail of the cornice and doorway is also typically Georgian in its vigorous proportions. The one outstanding feature of the façade is the fine scale observed among the different parts of the design.

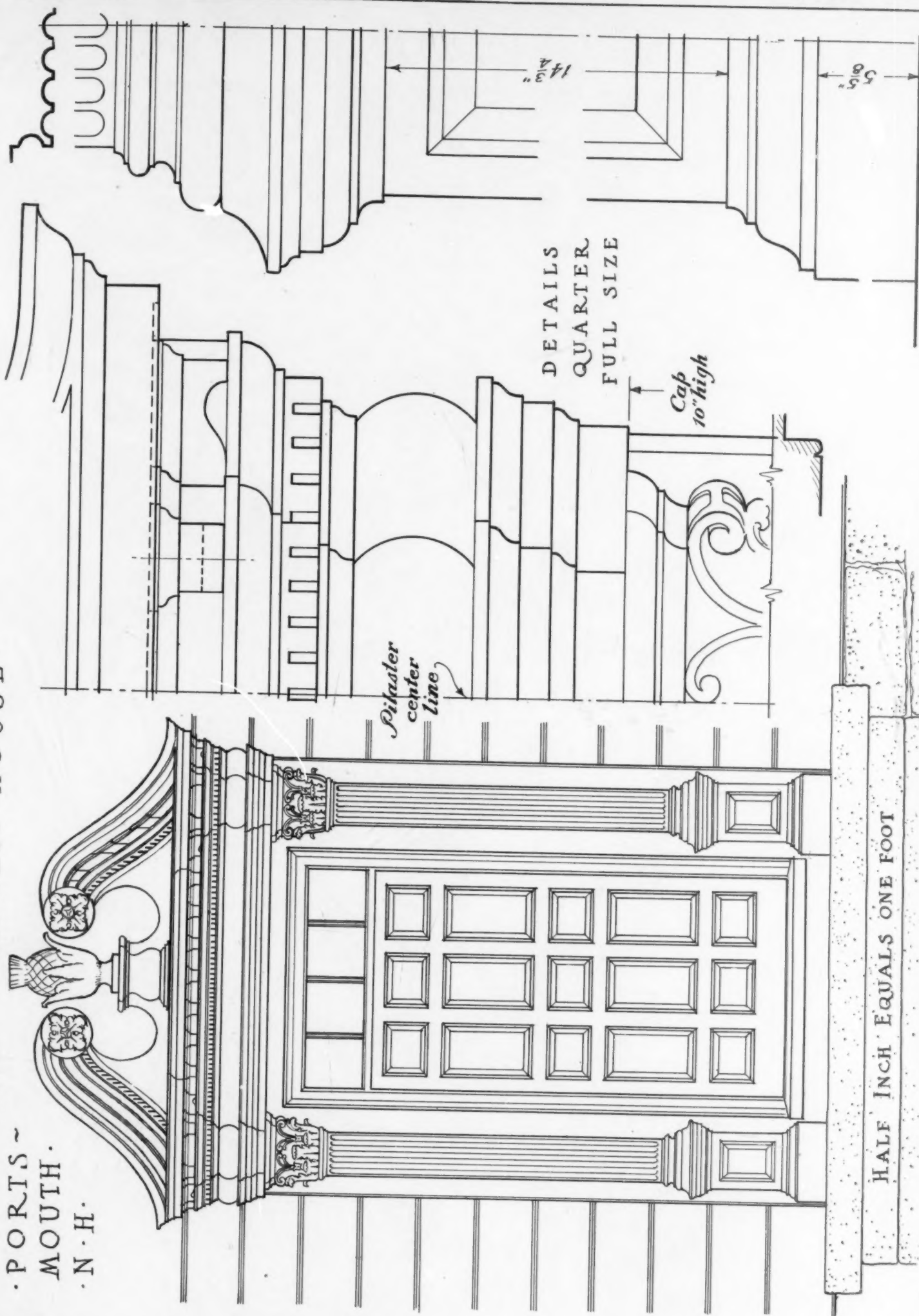
The interiors are characterized by wood paneling in the Georgian spirit, differences of detail in cornices, pilasters and bases occurring in the different rooms. The second floor hall is a particularly impressive piece of design, the substantial proportions of the fluted pilasters and bold panels lending an air of great dignity to the room.



· WENTWORTH · GARDNER · HOUSE ·  
 · PORTSMOUTH · N · H ·



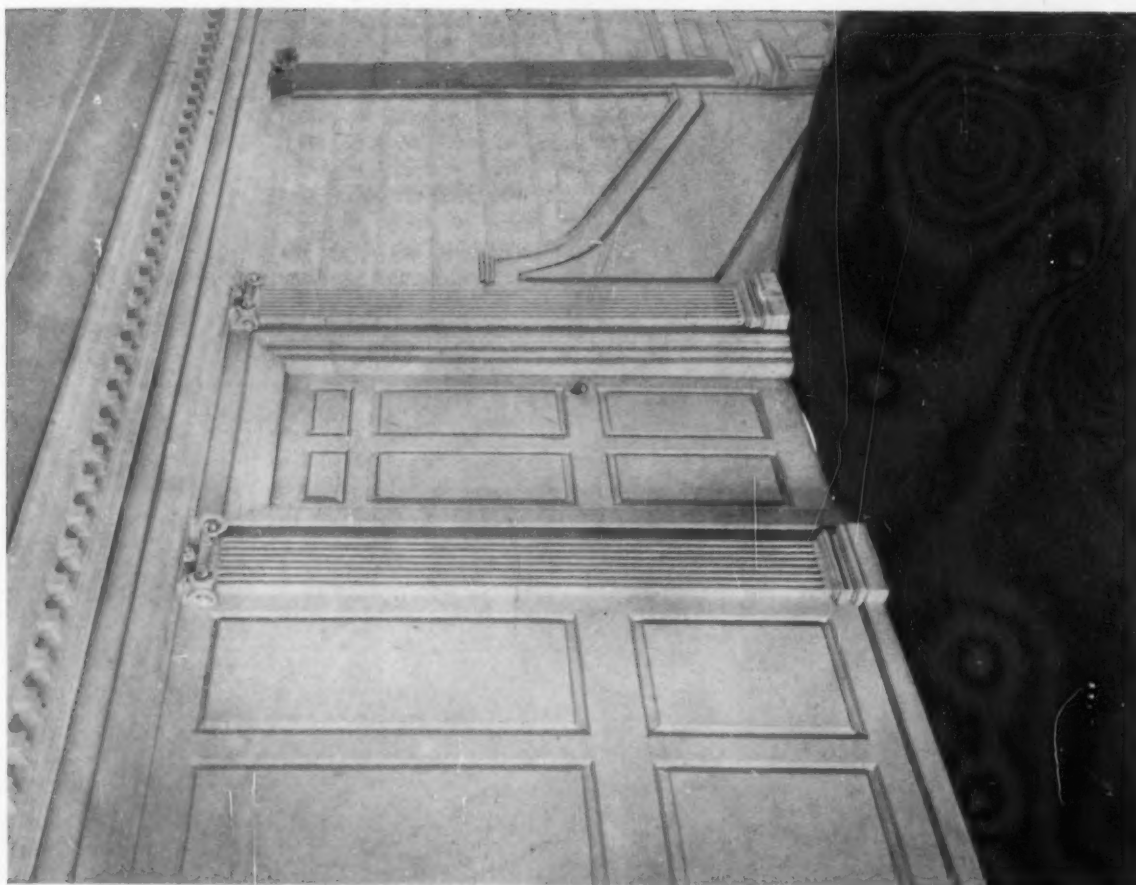
WENTWORTH ~ GARDNER ~ HOUSE.  
 PORTS ~  
 MOUTH.  
 N. H.



HALF INCH EQUALS ONE FOOT

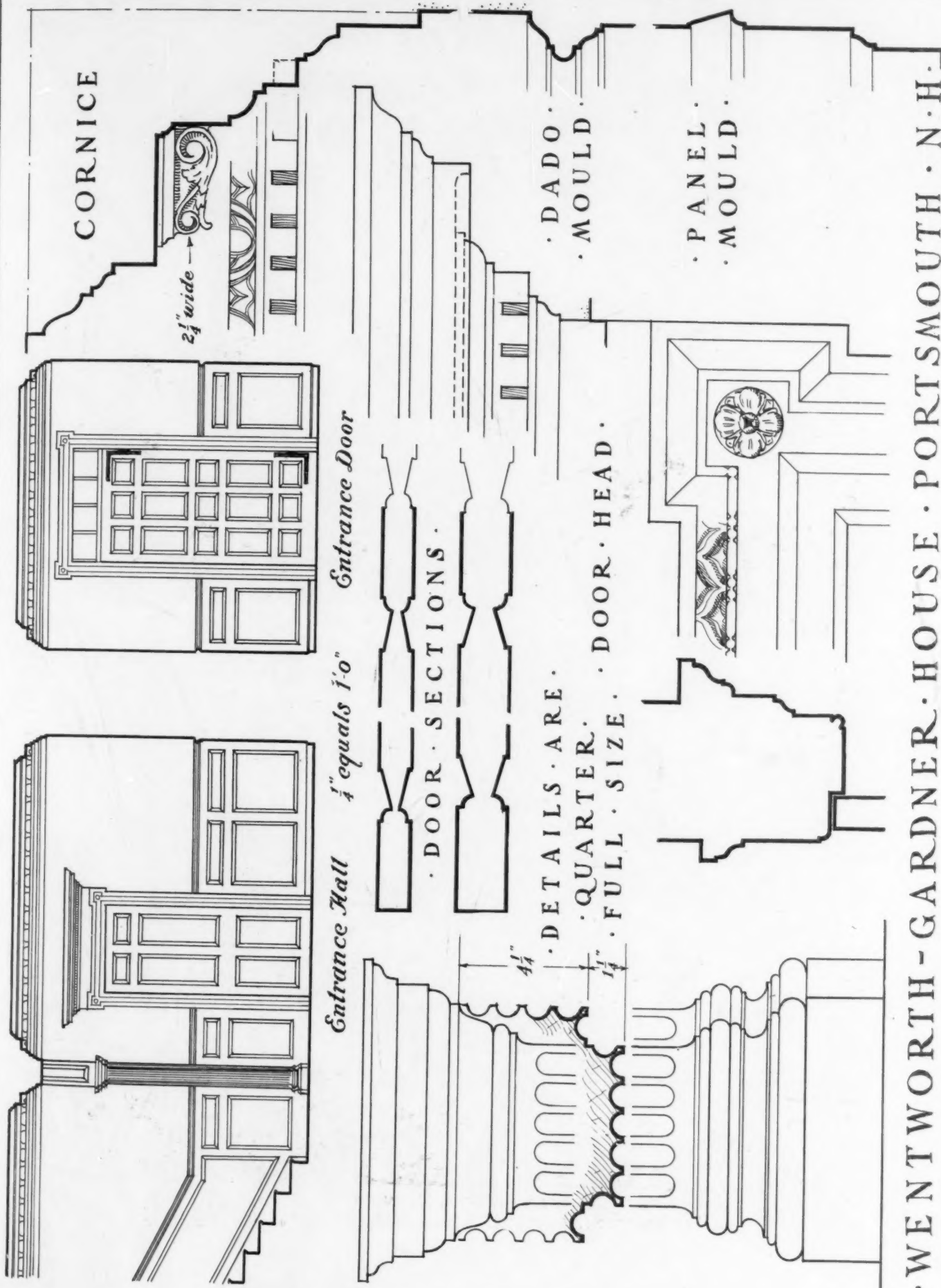


DETAIL OF FIRST FLOOR HALL



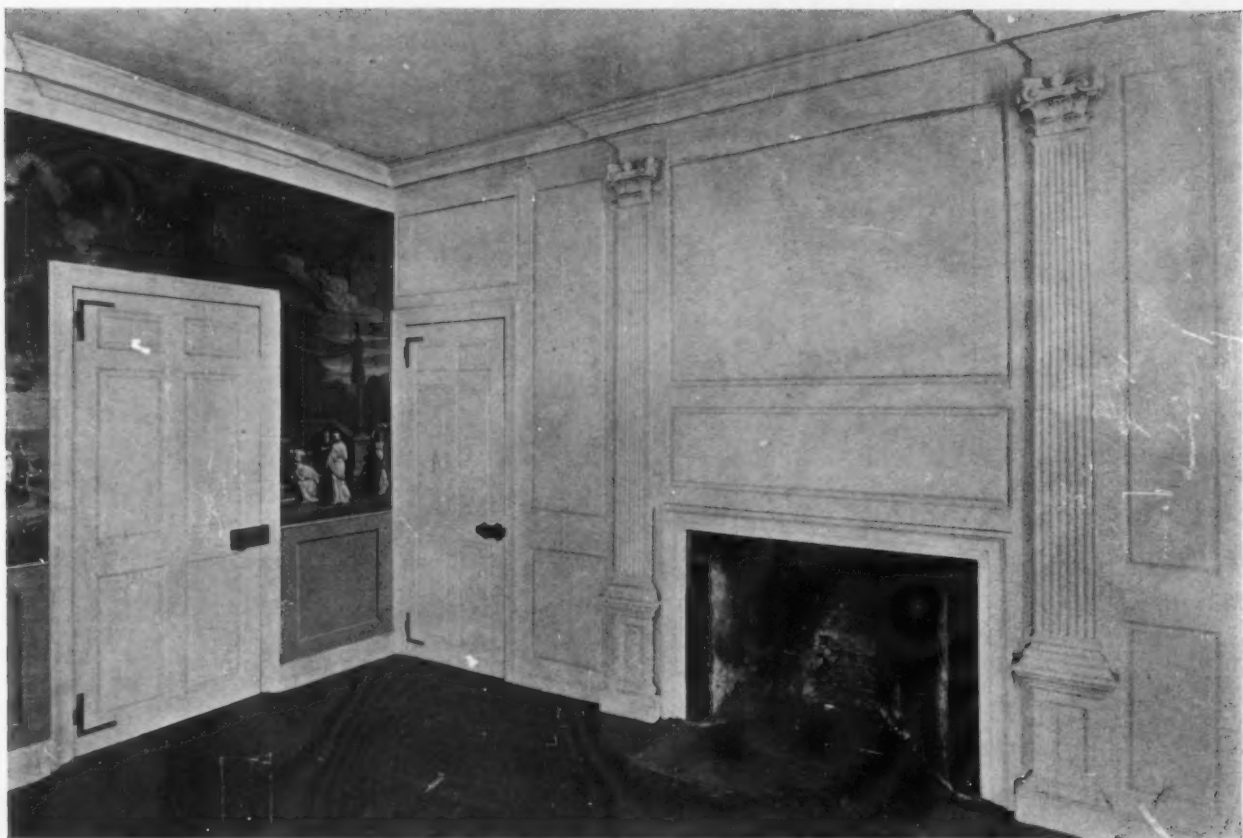
DETAIL OF SECOND FLOOR HALL

WENTWORTH-GARDNER HOUSE, PORTSMOUTH, N. H.

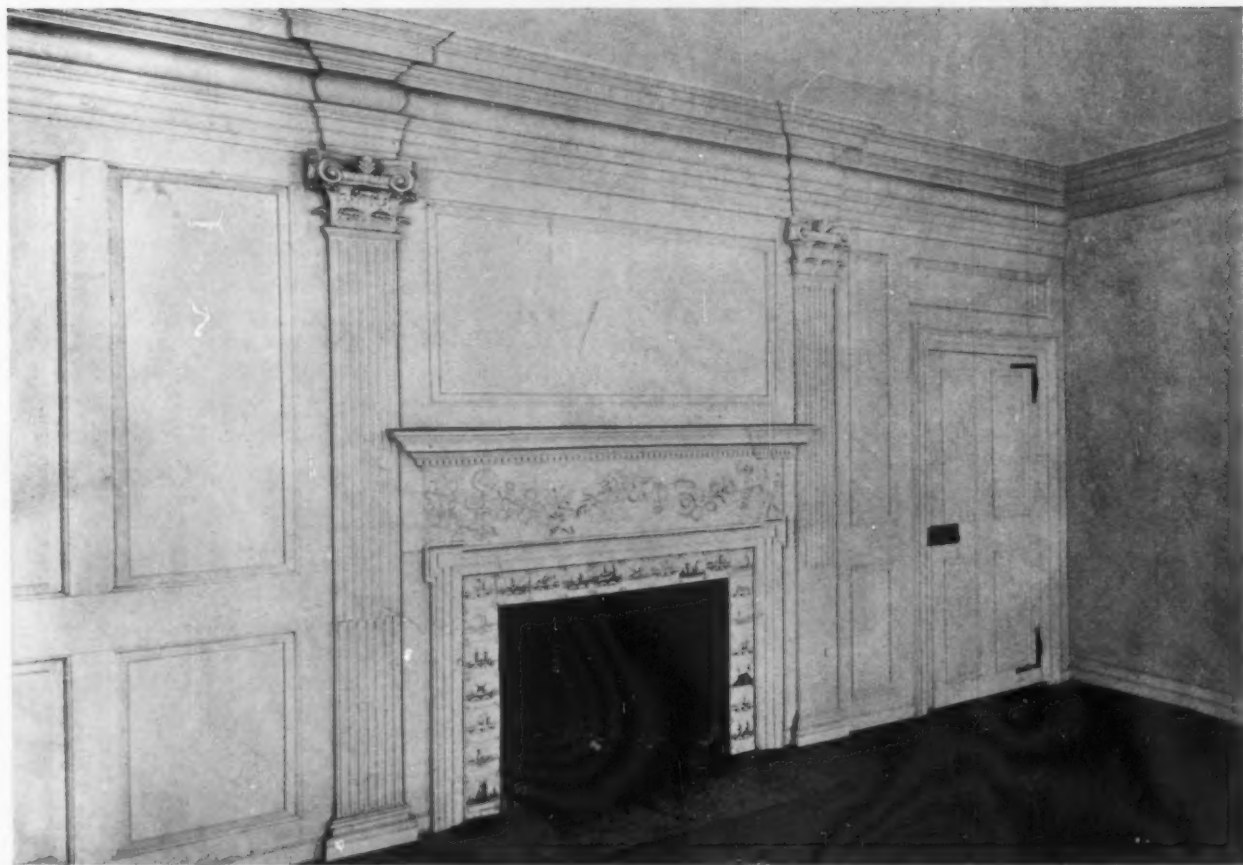


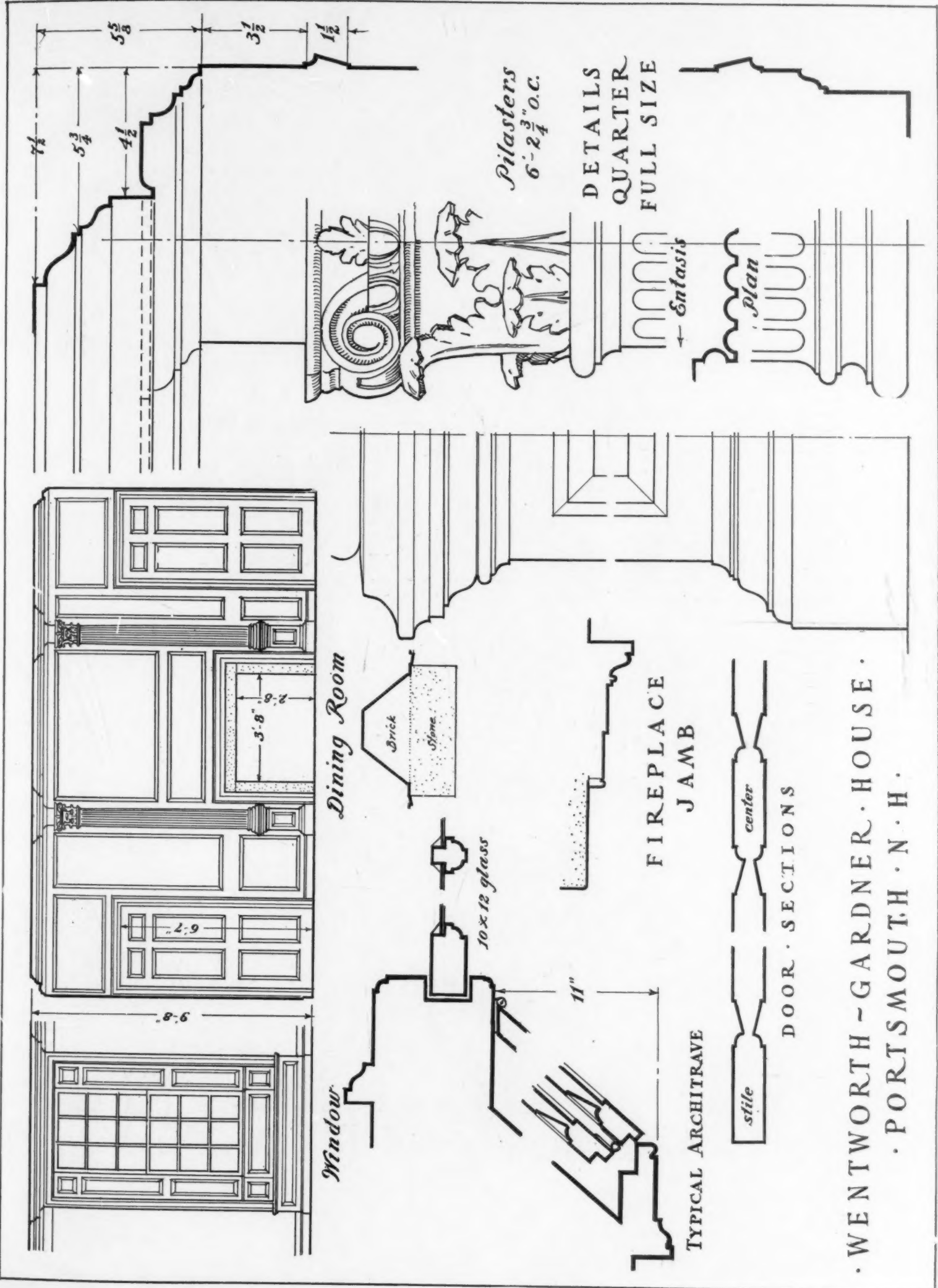
WENTWORTH-GARDNER HOUSE · PORTSMOUTH · N.H.



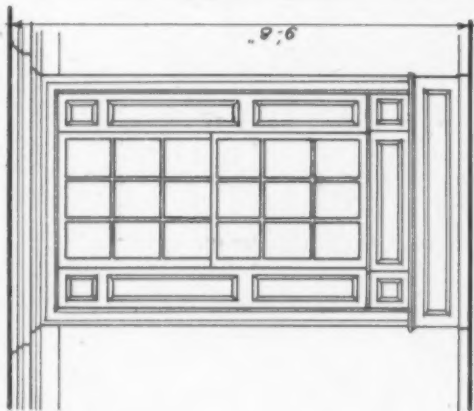


FIREPLACE SIDE OF DINING ROOM

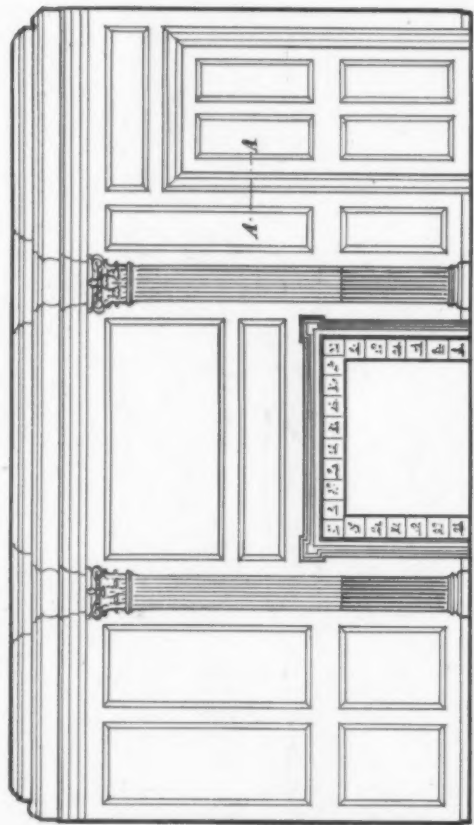
FIREPLACE SIDE OF SOUTH PARLOR  
WENTWORTH-GARDNER HOUSE, PORTSMOUTH, N. H.



· WENTWORTH-GARDNER HOUSE ·  
· PORTSMOUTH · N · H ·

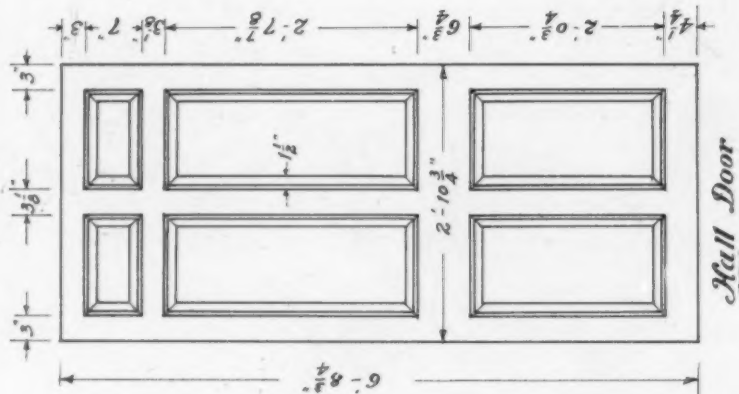


*Window*



*South Parlor*

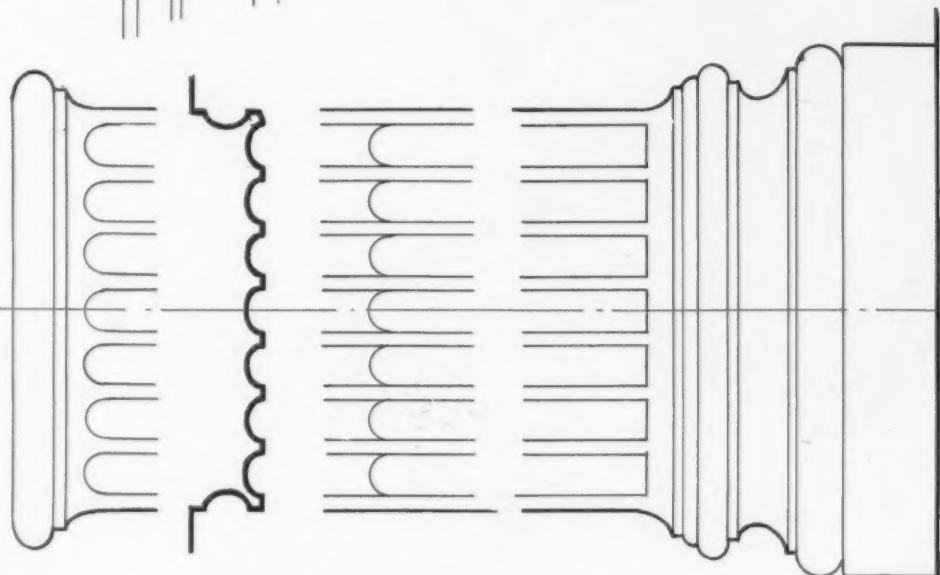
*Showing original panelling over fireplace*



*Hall Door*

DETAILS  
QUARTER  
FULL SIZE

*Capital 10" high*



*Fireplace Jamb*

*Section A-A*

· WENTWORTH - GARDNER · HOUSE ·  
· PORTSMOUTH · N · H ·



## Notes from England

WITH SPECIAL REFERENCES TO THE WORK OF RICHARDSON & GILL, ARCHITECTS

By H. J. BIRNSTINGL, A.R.I.B.A.

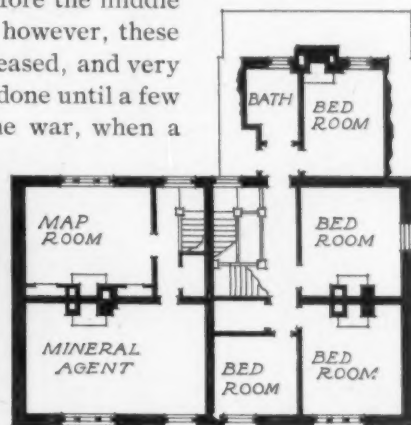
IN most offices there is to be heard an incessant rattle of tee-squares, as vast schemes are committed to paper, but as yet little has been projected into three dimensions. Nevertheless, a feverish activity pervades; volumes and portfolios are brought from their shelves, discolored with the dust of five years' accumulation; great tomes of Canina and of Bouchet, portfolios of Cesar Daly and of Famin and Grandjean—all is grist to the architect's mill. But the price of building is still rising, and no rift appears in the clouds which darken the architect's horizon. The vast government machinery, which is dealing with the housing of the working-classes, endeavoring by means of the 1919 Housing Act to make good a deficiency of half a million dwellings, moves forward ponderously, new difficulties and obstructions arising with exasperating persistency in its path. At present some ten thousand houses are in course of erection in England alone. A pause is made in all these labors upon the arrival of the mail from America, in order to examine the latest achievements from that great country, and sighs of admiration and envy are heard before work is resumed upon the heart-rending task of reducing the latest cottage cube, for the tenders have just

been received and the lowest among them is £1,000.

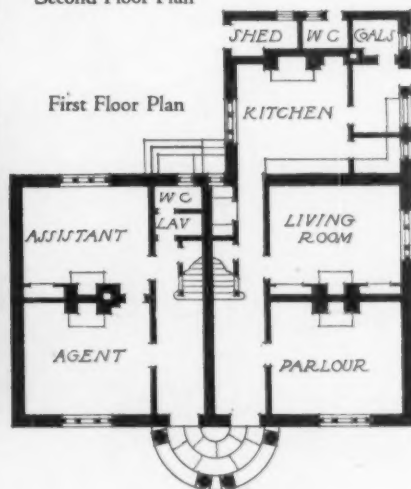
From the various compact and local schemes which are being undertaken by the different local governing authorities under the new act, it is interesting to turn to the consideration of a large and extensive plan of development; such plans forming, as it were, a diversion from the garden city type of undertaking, of which so many are in existence to-day. In the west of England there is a large district—the property of H.R.H., the Prince of Wales—which has been undergoing a comprehensive course of reconstruction during the last few years. The development of the Duchy of Cornwall Estate, as it is called, dates back to the beginning of the nineteenth century, and one of the first buildings to be erected on it, in 1806, was the Dartmoor Prison, designed by Daniel Asher Alexander. During the ensuing years considerable development took place, the little hamlet of Princetown grew, and in 1813 the church was completed. Before the middle of the century, however, these activities had ceased, and very little more was done until a few years before the war, when a



New Duchy Offices, Liskeard, Cornwall, England  
Richardson & Gill, Architects



Second Floor Plan



First Floor Plan



Portion of Garden Elevation

policy of reconstructing the farm buildings, cottages and tenements, and the erection of new groups of buildings in various districts on the Duchy of Cornwall Estate, was initiated. The architects appointed to carry out this important work were Messrs. Richardson & Gill

It was the aim of the Duchy of Cornwall to preserve the distinctive architectural traditions peculiar to Devonshire and Cornwall for all the new work to be erected on the estate. The scope of prototype ranges, as has already been mentioned, over a period covering the late eighteenth and early nineteenth centuries, good examples of proportion and simplicity being found as late as the year 1830. The abundance of granite and the quality of the Delabole slating for roofing are determining factors in the design of such buildings. The Duchy offices at Liskeard are illustrated as typical of the pleasing effects that have been obtained in this work through extreme simplicity in design and the utmost economy of material. They contain two buildings,—the one comprising the ad-

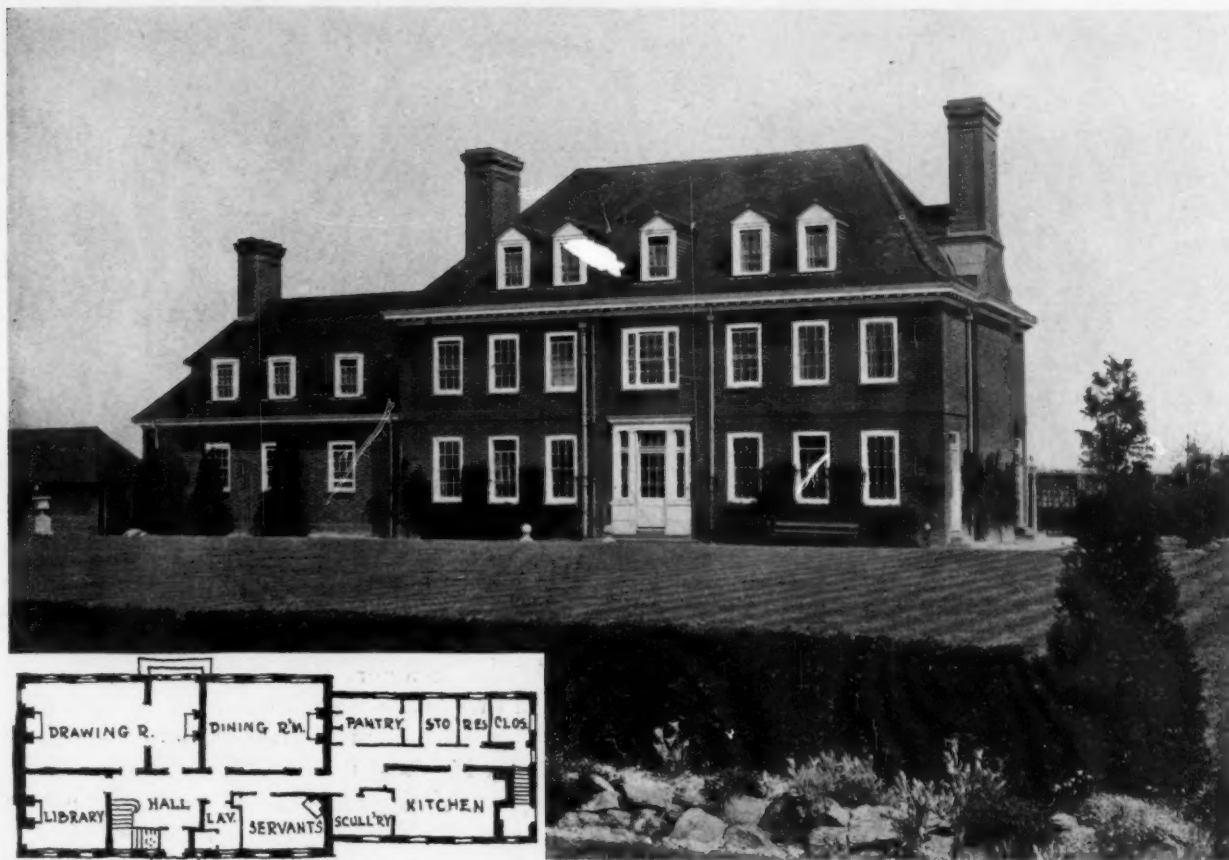
ministrative offices and the other a dwelling.

The work of Messrs. Richardson & Gill is by no means limited to housing developments. The firm is one which has attained to an important position in the profession with unusual speed, and its activities are manifold. Professor Richardson, although only thirty-nine years of age, has been a member of the Council of the Royal Institute of British Architects. He is, furthermore, professor of architecture at London University and the author of many well known books, as well as joint editor of *The Architects' Journal*. From his office is to emanate within the next few months one of the largest buildings of the decade. Tall and stately, designed in the Italian manner, it will rear its lofty head high above the turmoils of Westminster, and gaze serenely over St. James' Park towards Sir Aston Webb's remodeled Buckingham Palace. This is to be the new offices of the Underground Railways.

The most recent example of larger domestic work executed by Messrs. Richardson & Gill is a house at Sunningdale for General Sir Bruce Hamilton. "Hilltop," as it is so aptly



Entrance Hall at "Hilltop," Sunningdale, Berks, England  
Richardson & Gill, Architects



THE GARDEN FRONT



THE ENTRANCE FRONT

"HILLTOP," THE HOUSE OF GENERAL SIR BRUCE HAMILTON, SUNNINGDALE, BERKS, ENGLAND  
RICHARDSON & GILL, ARCHITECTS





Half Floor Plans and Front Elevation, Cottage Houses for the Manchester Corporation

called on account of the eminent position which it occupies on the highest part of the famous Sunningdale Golf Links, is an example of a modern country house, designed to sympathize with the traditional Georgian manor houses of Berkshire. Reticent in design, yet all is found, upon close inspection, to possess the qualities and refinements which characterized that period. The grounds, formed on a site in the middle of the links, have been planned to sympathize with the lines of the house, and the garage takes the place of the traditional stable and coachhouses associated with buildings of this character. The house is compact in arrangement, the principal reception rooms facing south, a special feature being the servants' wing with kitchen, scullery and offices on the ground floor, above which are the servants' bedrooms. The staircase, from which indeed it may be said the whole house takes its tone, has an air of spaciousness and homeliness, and despite its unpretentious character it will be found, upon examination, to be satisfactory in every detail, no part receiving an undue emphasis which might disturb the subdued and dignified effect of the whole.

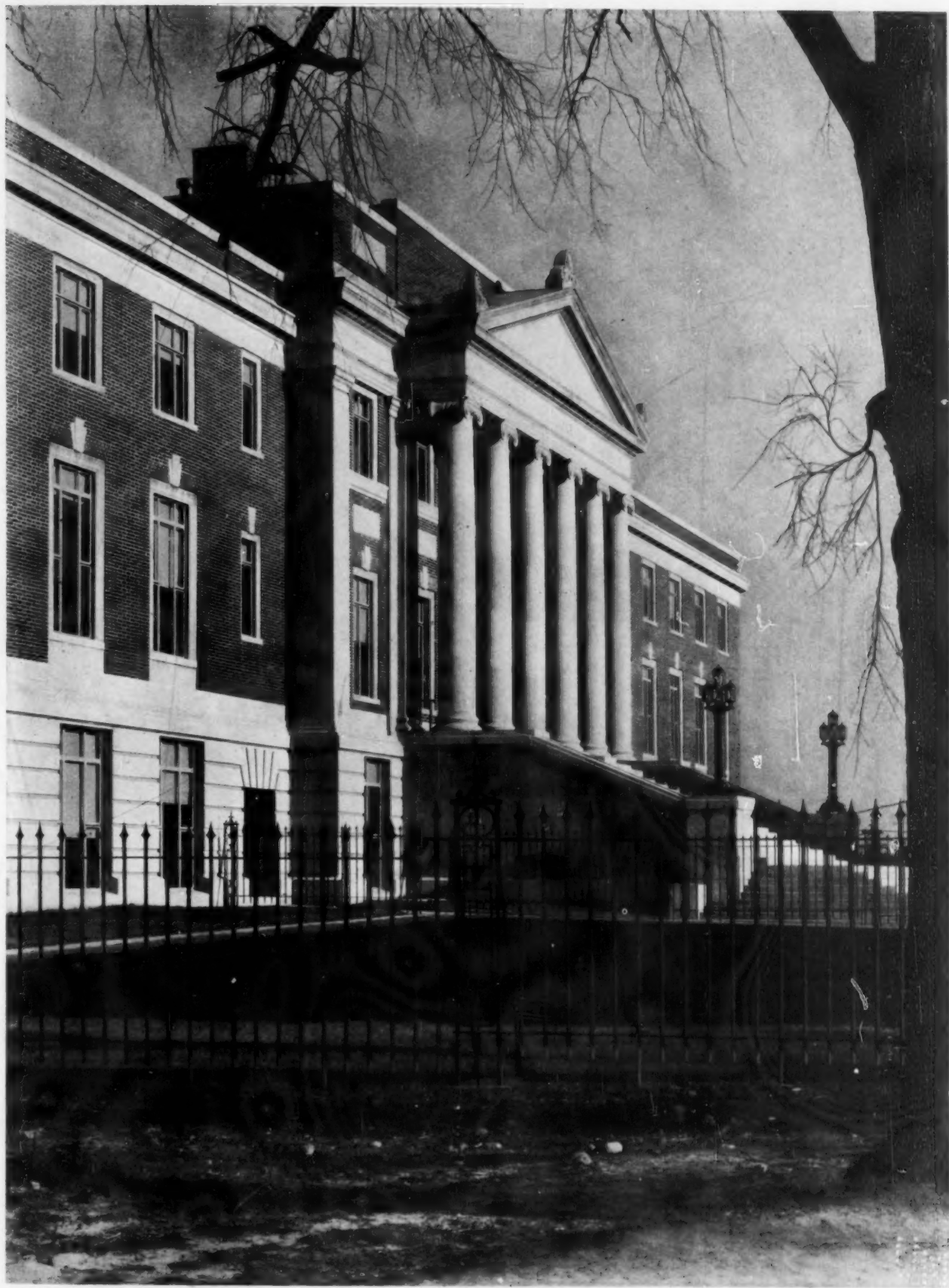
On all sides a return to these simple prototypes is to be found. There would appear to be a very real revulsion against the somewhat restless elevations which characterized much of the garden city work of ten years ago. To a large extent this early nineteenth-century revival is artificial, although it owes its inception to the work of certain younger men in the profession, who before the war were making their influence felt. There is, however,

no doubt that the very high cost of building has given the movement a decided impetus. The necessity for designing cheaply has become imperative, and men are turning instinctively for what help they can find in the work around them; expensive roof-cutting, superfluous ornament, can no longer be afforded; picturesqueness which is dependent upon irregular massing and broken lines is soon discovered to be an item of expense, with which designers must dispense, and so the work of the Georgian period is being rediscovered. Here they may learn how dignity and beauty can be obtained without undue expenditure.

The cottages designed by Mr. Gordon Hemm, a Manchester architect, are typical solutions to the housing problem of the day. To those accustomed to the intricacies of the last few years such buildings may appear dull and devoid of interest, but to those who realize the charm of simplicity and the value of harmonious proportions, they cannot fail to make their appeal.

In order that there may be no opposition to new forms of construction which may tend to expedite housing, the Ministry of Health has formed a Standardization and Construction Committee, whose function it is to examine any new methods which may be put before it. Already many forms of concrete construction, both pre-cast and site moulded, have received official sanction, and under certain conditions, where adequate protection against fire is assured, timber houses may be built. In many parts of the country, experimental cottages are in process of erection.

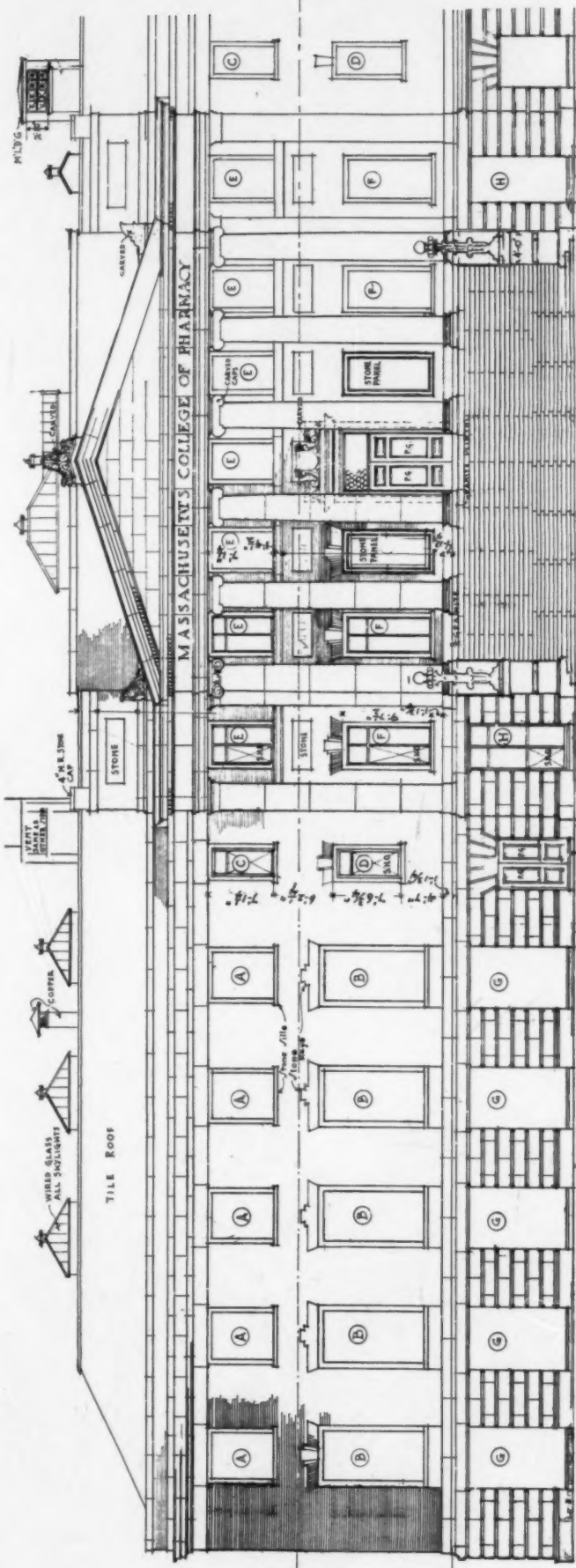
Half Floor Plans and Front Elevation, Cottage Houses for the Manchester Corporation  
Gordon Hemm, Architect



DETAIL OF ENTRANCE PORTICO  
MASSACHUSETTS COLLEGE OF PHARMACY, BOSTON, MASS.  
KILHAM & HOPKINS, ARCHITECTS



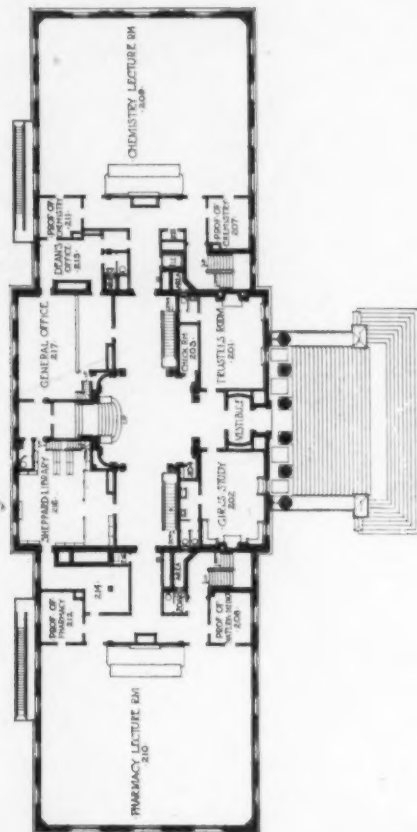




PRINCIPAL ELEVATION



GROUND FLOOR PLAN

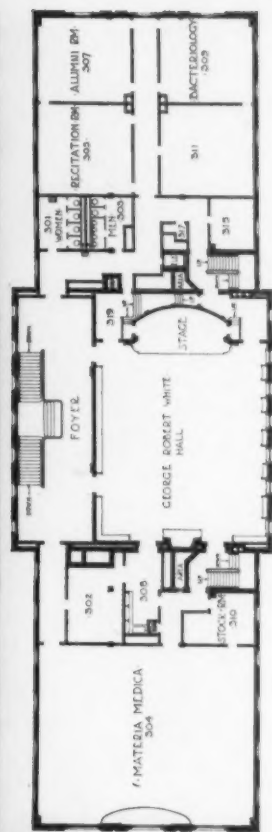


FIRST FLOOR PLAN

MASSACHUSETTS COLLEGE OF PHARMACY, BOSTON, MASS.

KILHAM & HOPKINS, ARCHITECTS

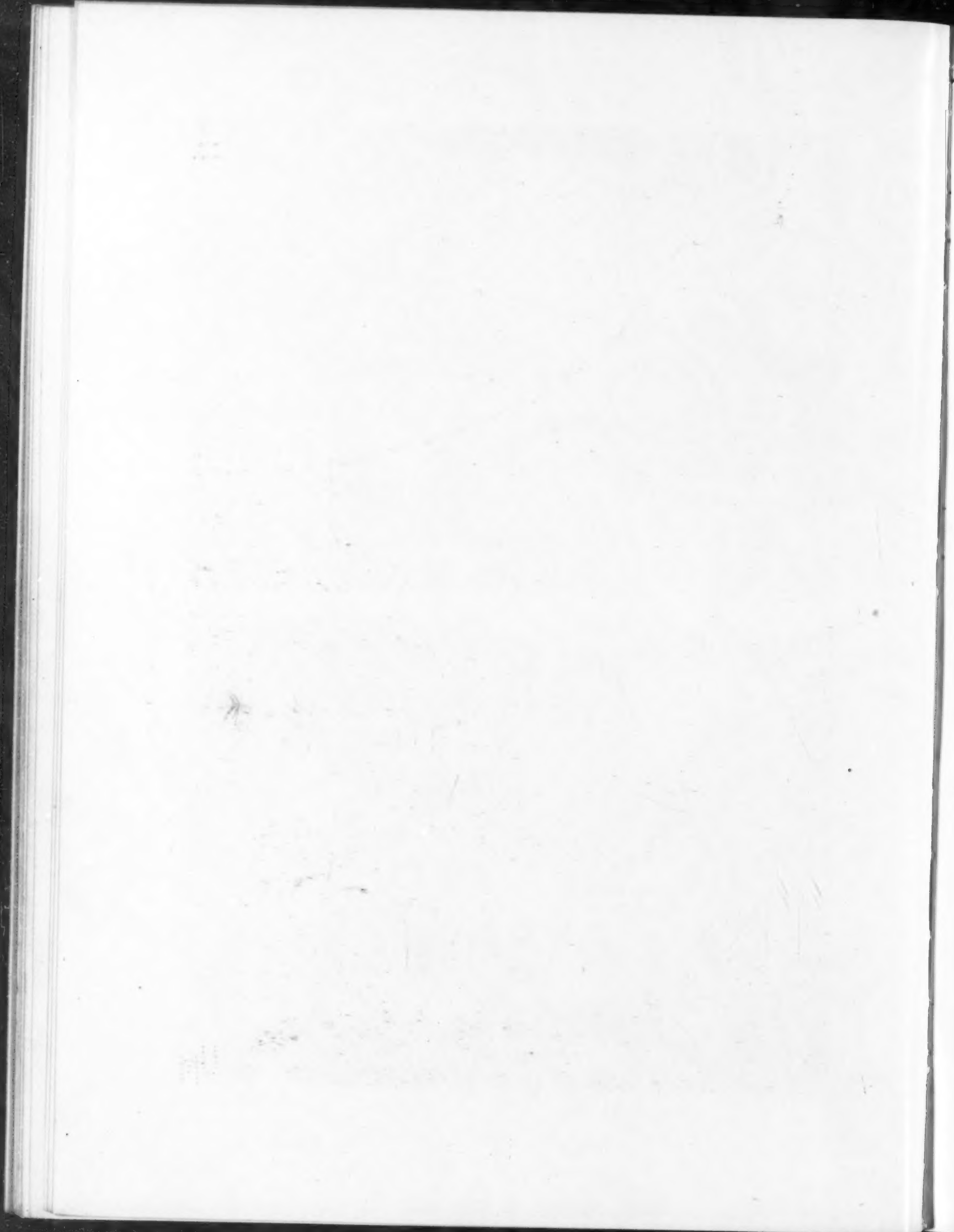


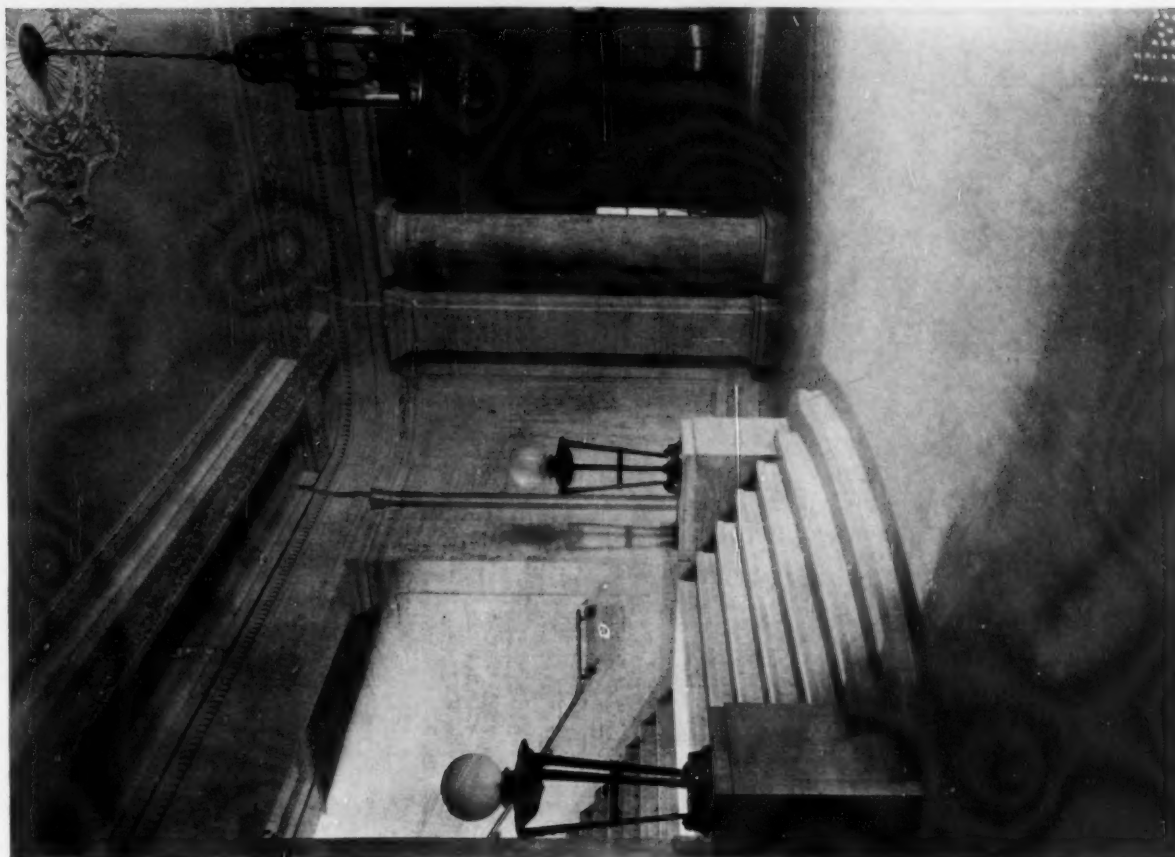


SECOND FLOOR PLAN

MASSACHUSETTS COLLEGE OF PHARMACY, BOSTON, MASS.  
KILHAM & HOPKINS, ARCHITECTS







ENTRANCE HALL



STAIRWAY AND SECOND FLOOR HALL

MASSACHUSETTS COLLEGE OF PHARMACY, BOSTON, MASS.

KILHAM & HOPKINS, ARCHITECTS

LIBRARY  
OF THE  
BOSTON PUBLIC  
LIBRARY





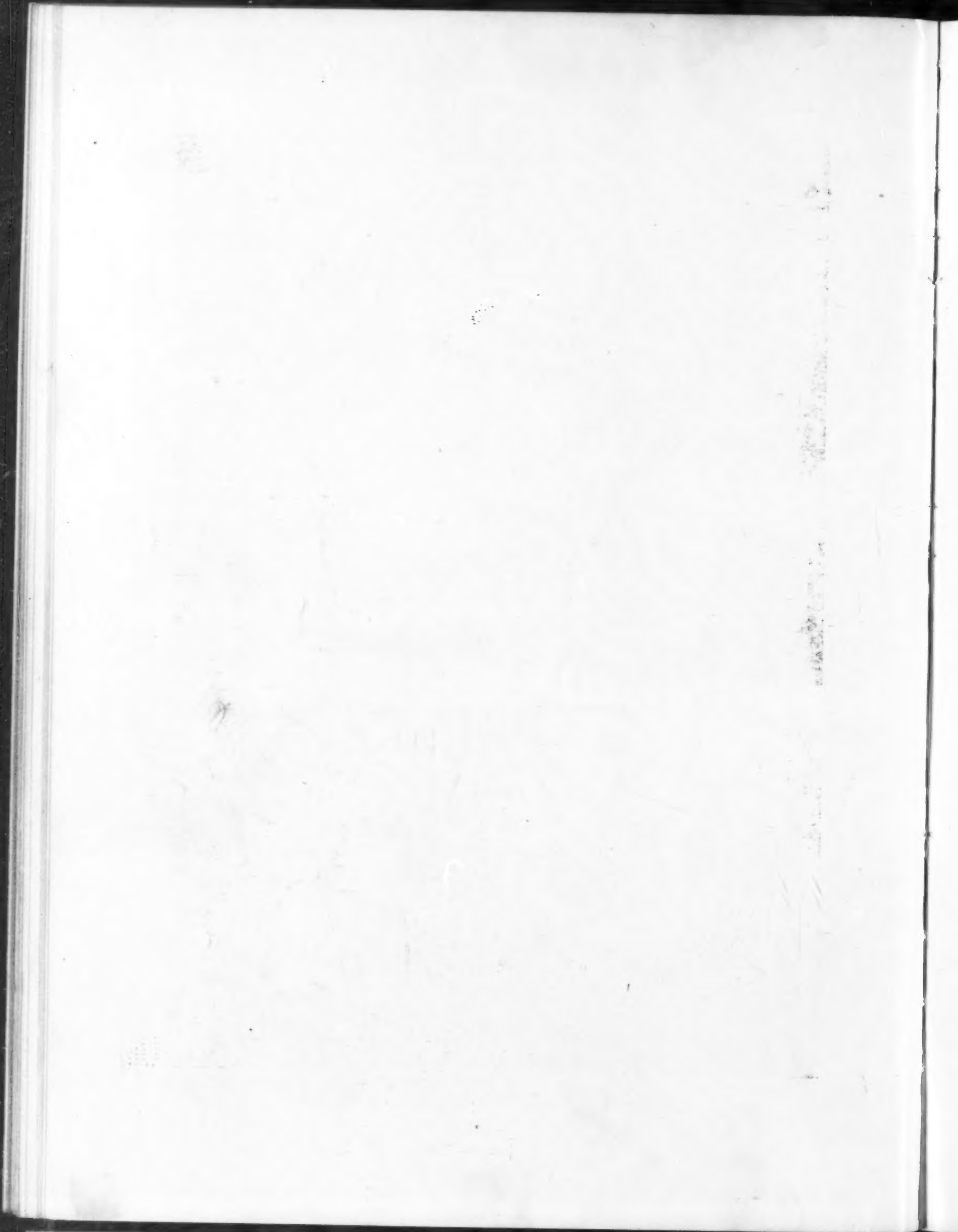
DETAIL OF MAIN FACADE



AUDITORIUM LOOKING TOWARD STAGE

MASSACHUSETTS COLLEGE OF PHARMACY, BOSTON, MASS.

KILHAM & HOPKINS, ARCHITECTS





McPHERSON SQUARE BRANCH, FREE LIBRARY OF PHILADELPHIA, PHILADELPHIA, PA.

WILSON EYRE & McILVAINE, ARCHITECTS



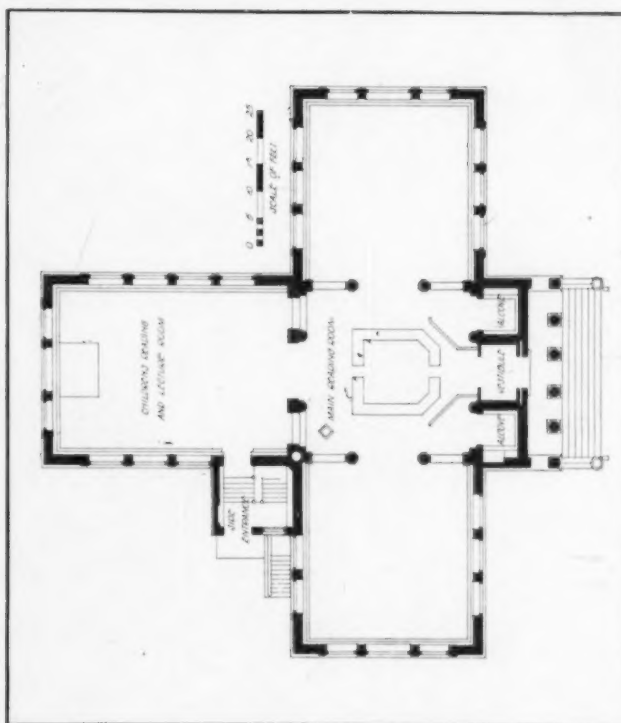
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DETAIL OF PORTICO  
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WILSON EYRE & McILVAINE, ARCHITECTS



VIEW OF REAR



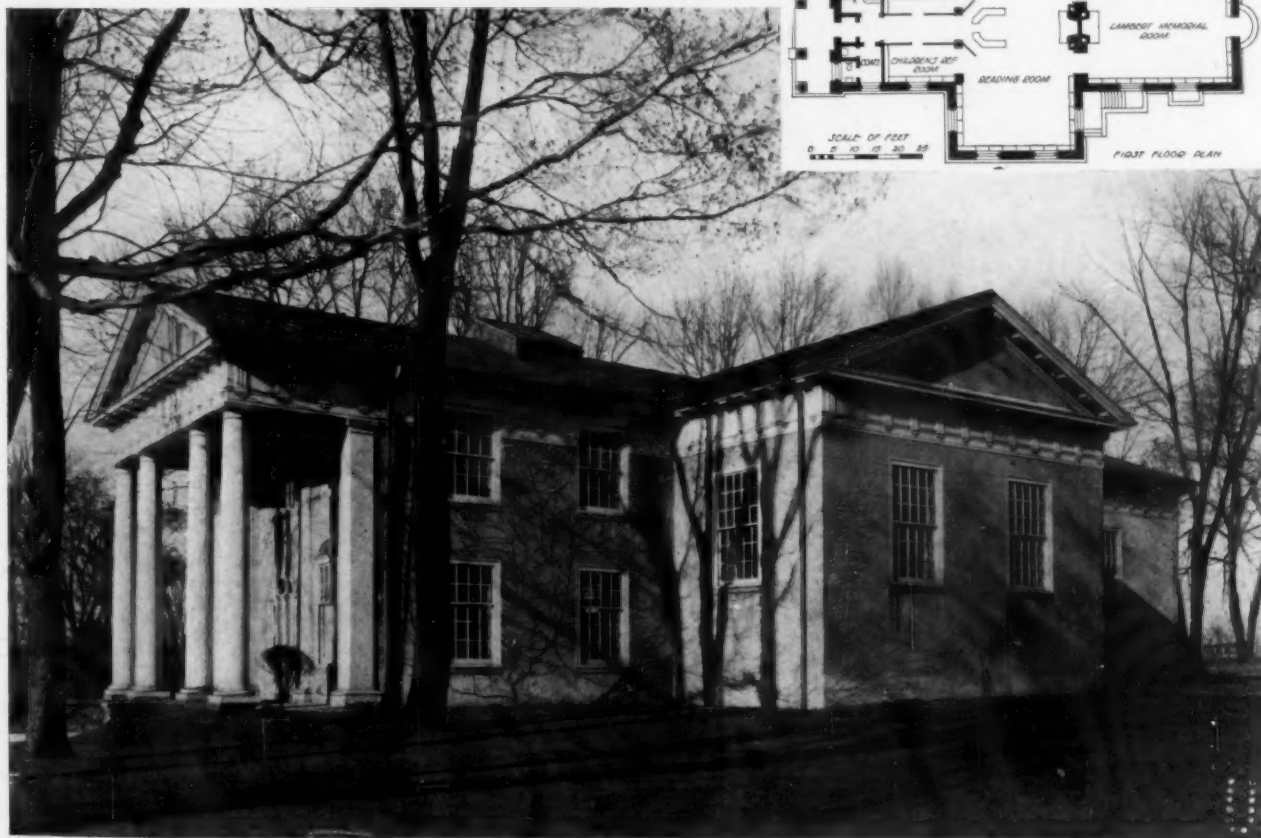
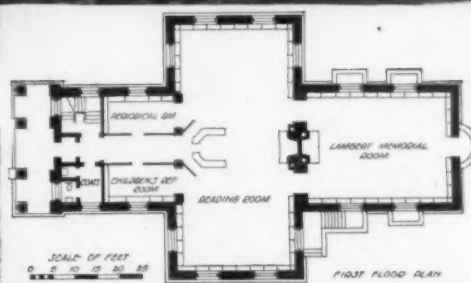
MAIN FLOOR PLAN

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DETAIL OF ENTRANCE PORTICO

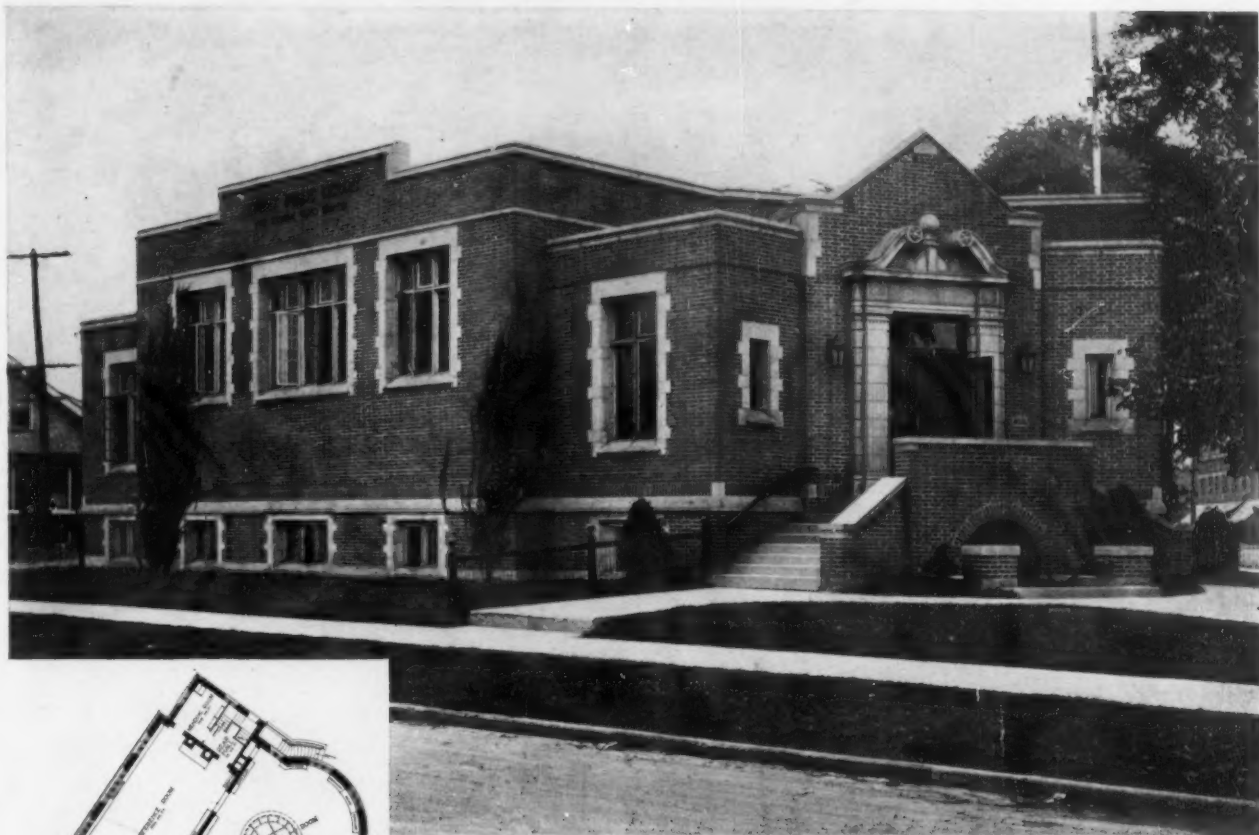


GENERAL EXTERIOR VIEW

ALTERATIONS AND ADDITIONS TO ABINGTON LIBRARY, JENKINTOWN, PA.  
ZANTZINGER, BORIE & MEDARY, ARCHITECTS

1847

1847  
1848  
1849  
1850



GENERAL EXTERIOR VIEW



DETAILS OF ENTRANCE

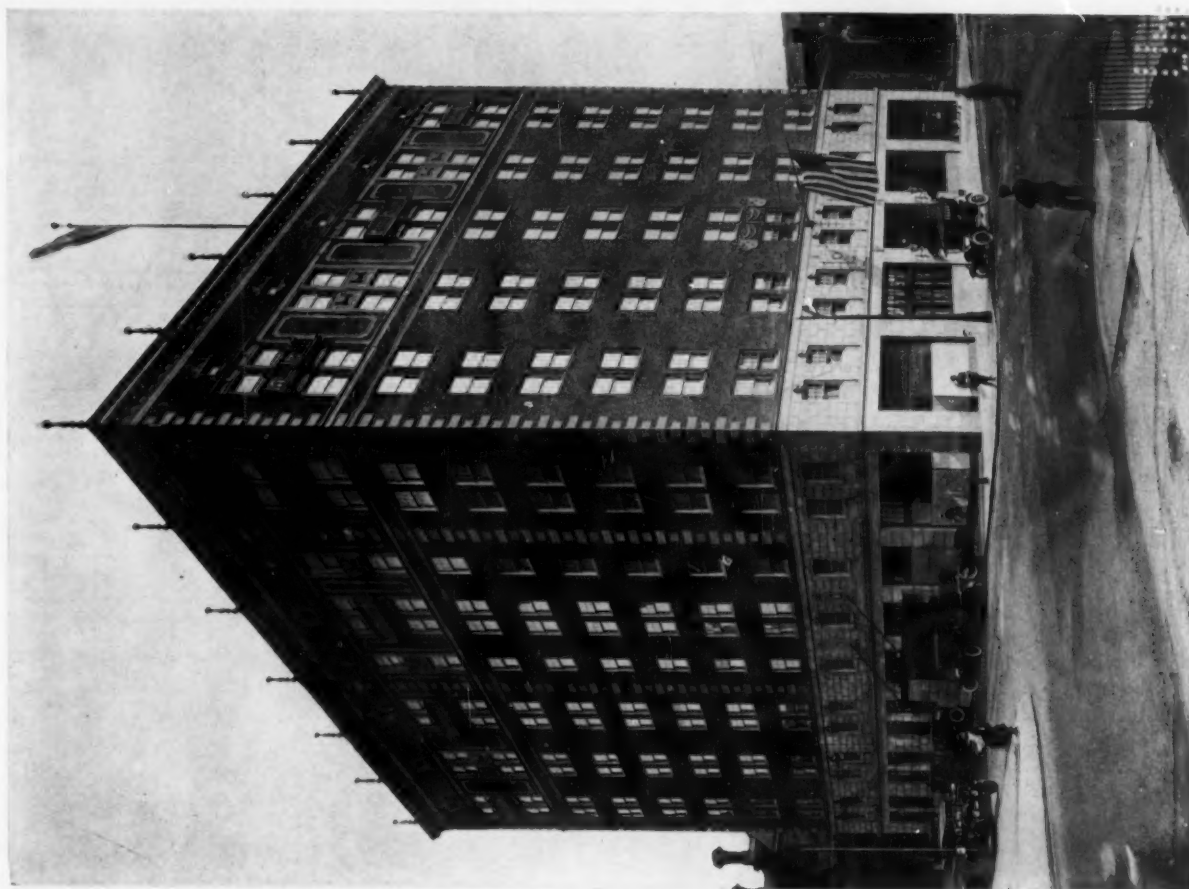
✓ GEORGE OSIUS BRANCH LIBRARY, DETROIT, MICH.

DONALDSON & MEIER, ARCHITECTS



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GENERAL EXTERIOR VIEW



DETAIL OF ENTRANCE

HOTEL FORT SHELBY, DETROIT, MICH.  
RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS

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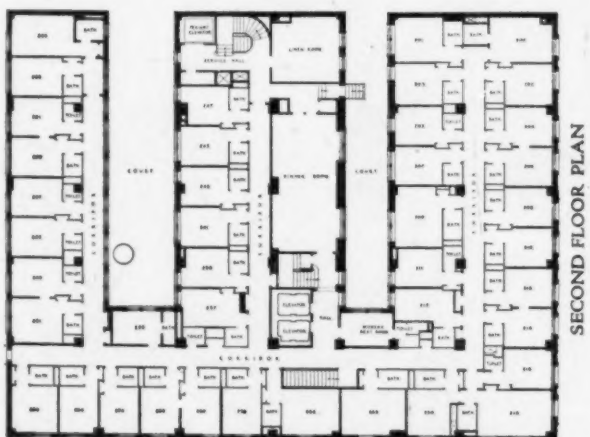
TYPICAL FLOOR PLAN



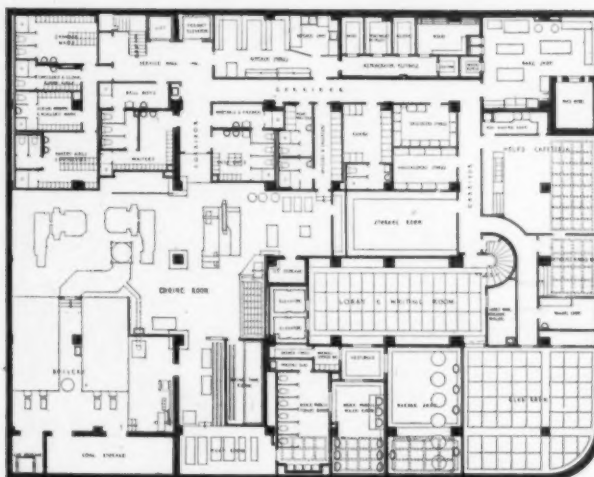
FIRST FLOOR PLAN



ENTRANCE TO DINING ROOM FROM LOBBY  
HOTEL FORT SHELBY, DETROIT, MICH.  
RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS



SECOND FLOOR PLAN

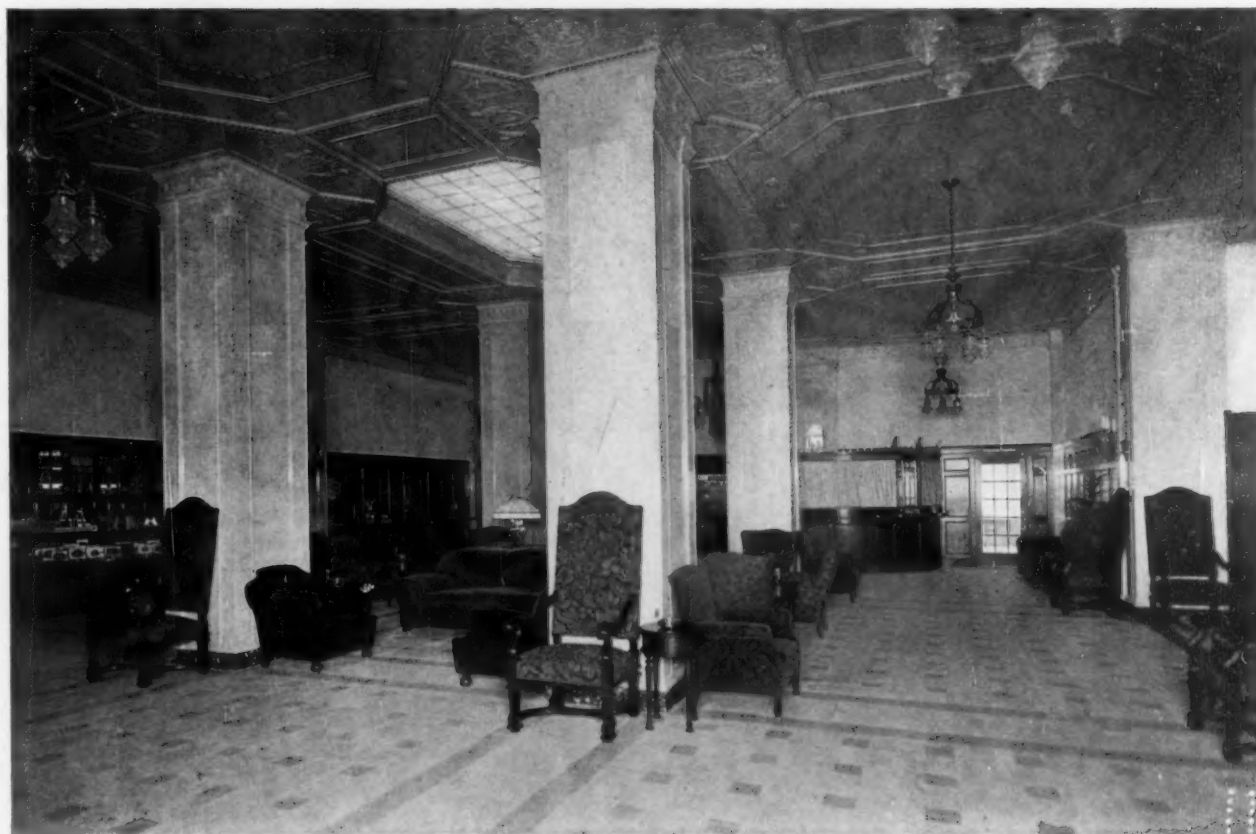


BASEMENT FLOOR PLAN

THE  
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MAIN DINING ROOM

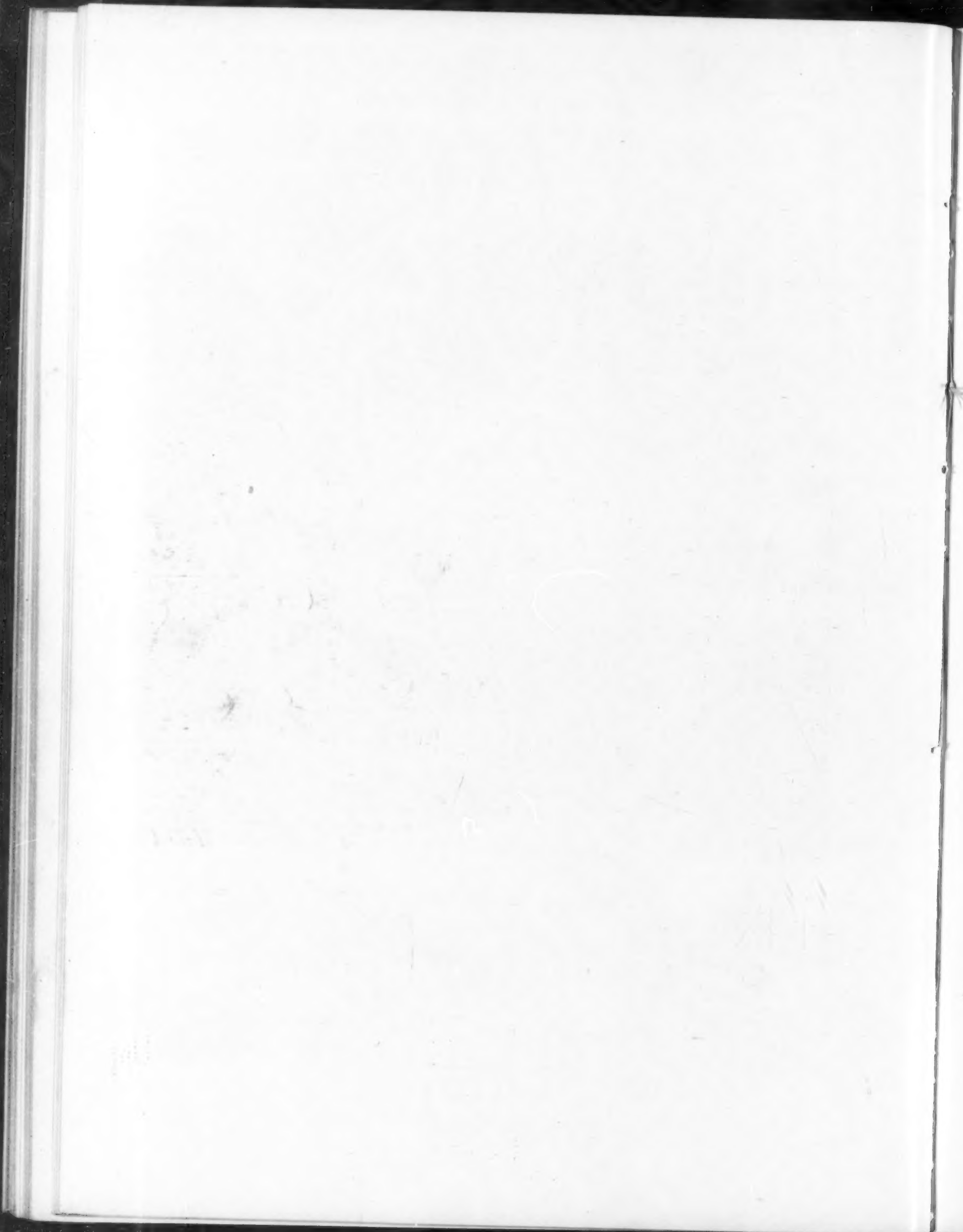


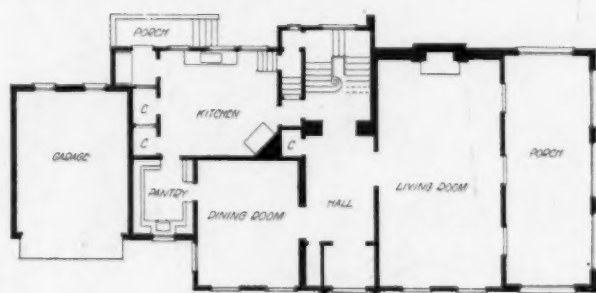
VIEW IN LOBBY LOOKING TOWARD OFFICE

HOTEL FORT SHELBY, DETROIT, MICH.

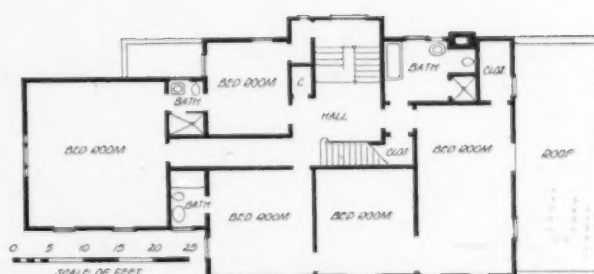
RICHARD E. SCHMIDT, GARDEN & MARTIN, ARCHITECTS







FIRST FLOOR PLAN

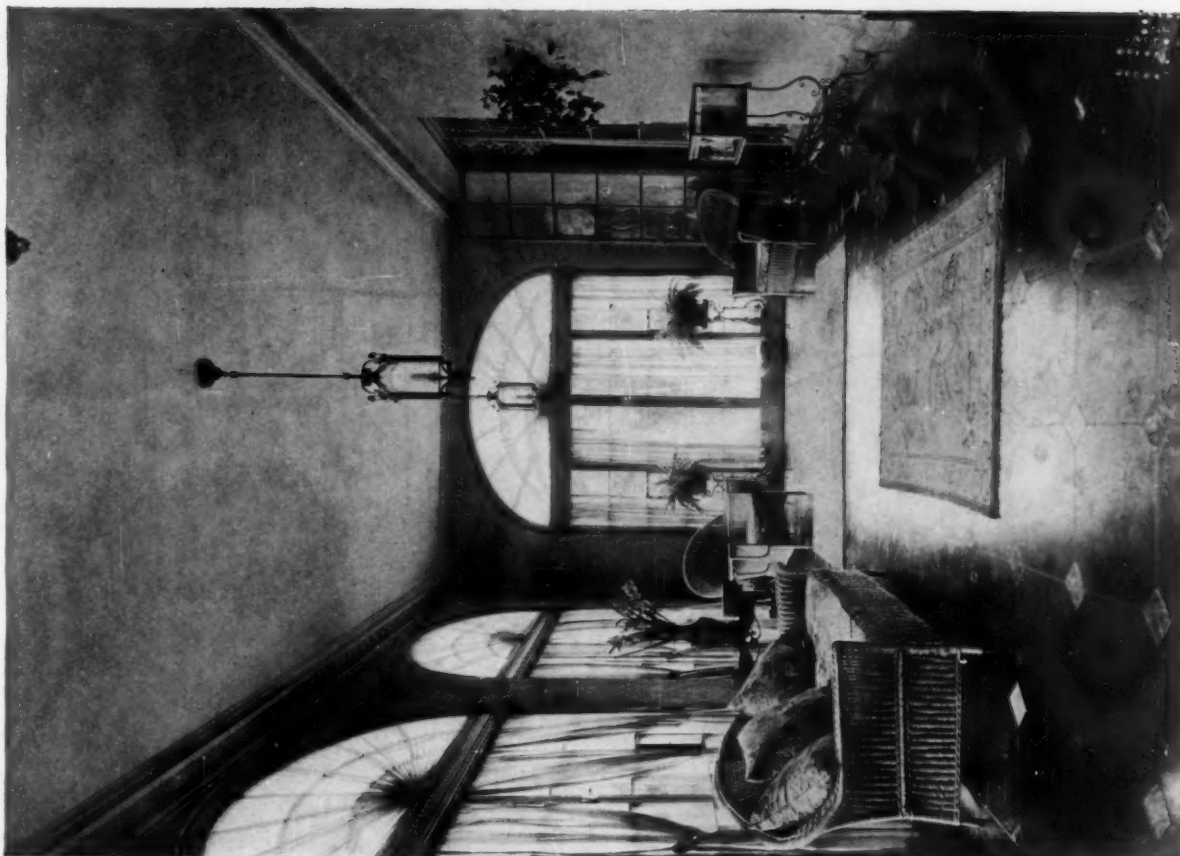


SECOND FLOOR PLAN

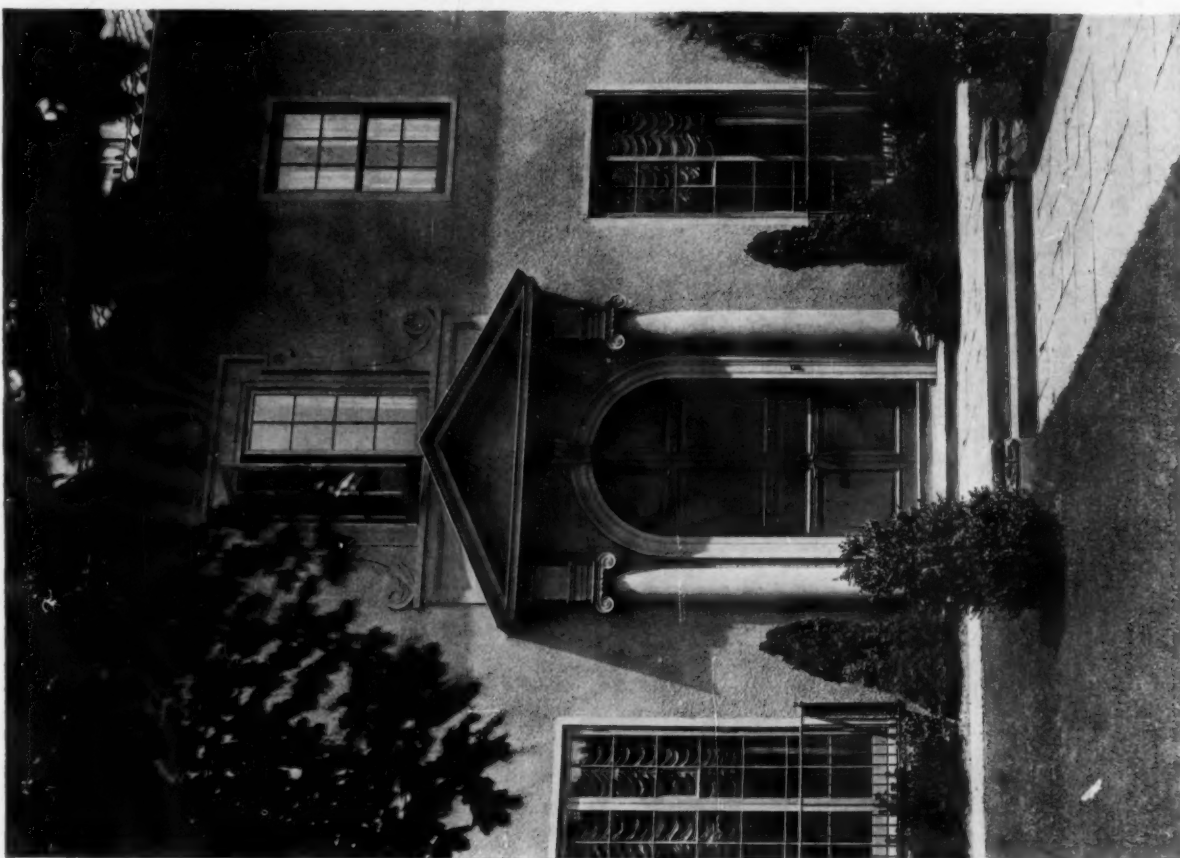
HOUSE IN BROOKLYN, N. Y.  
HOWARD MAJOR, ARCHITECT







SUN ROOM



ENTRANCE DETAIL

HOUSE IN BROOKLYN, N. Y.  
HOWARD MAJOR, ARCHITECT

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LIVING ROOM



DINING ROOM

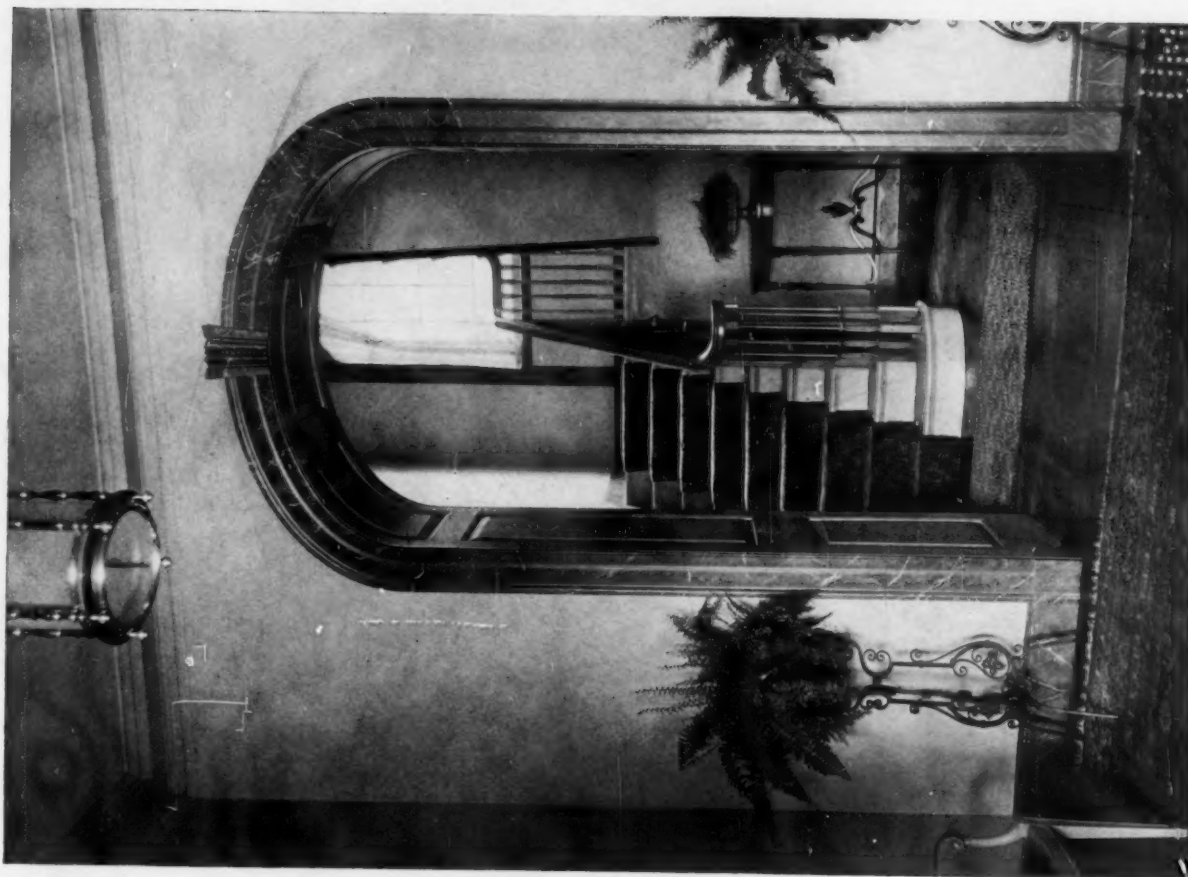
HOUSE IN BROOKLYN, N. Y.

HOWARD MAJOR, ARCHITECT

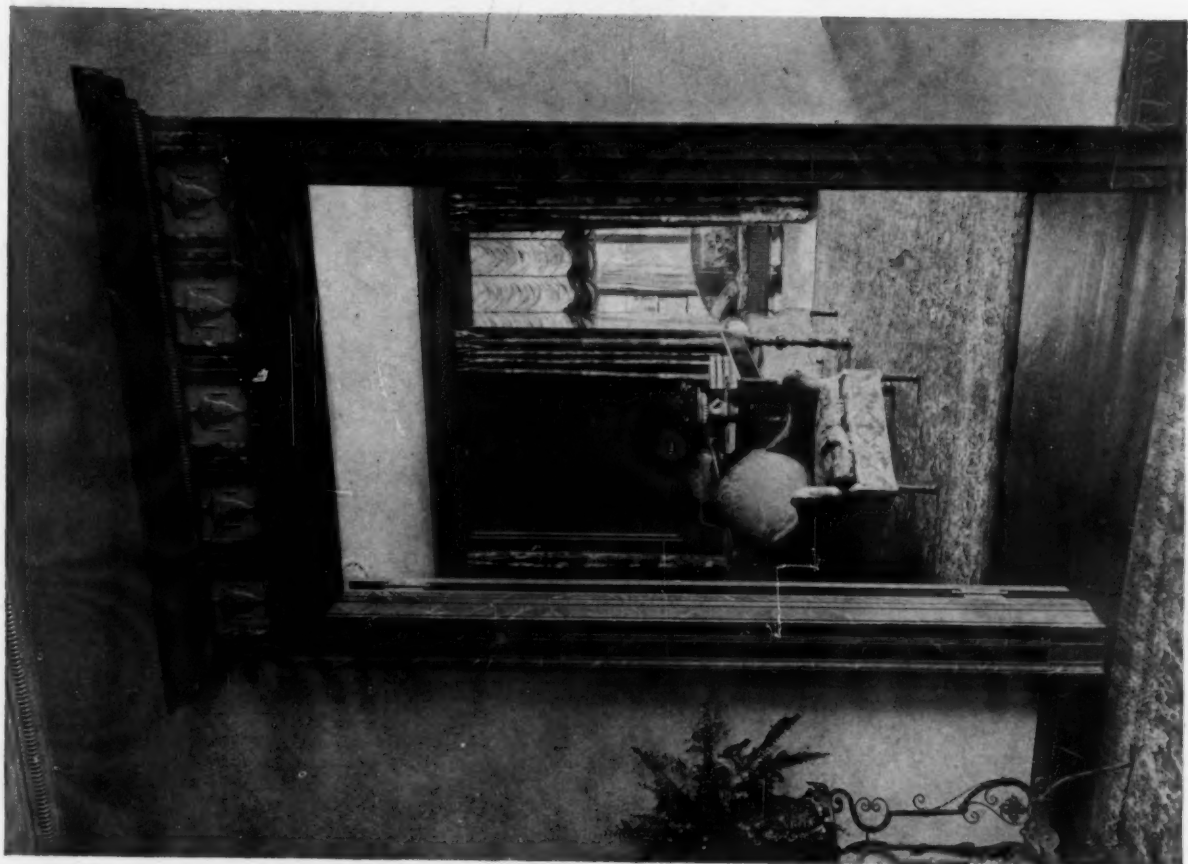


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177  
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HALL DOORWAY AND STAIRCASE



DOORWAY FROM HALL TO LIVING ROOM

HOUSE IN BROOKLYN, N. Y.  
HOWARD MAJOR, ARCHITECT

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# The Next Step in Architectural Education

By ALBERT KELSEY, F.A.I.A.

THE excellent editorial in the November issue of THE ARCHITECTURAL FORUM on the public's lack of appreciation and understanding of architecture is most timely. I, too, attended the Nashville Convention where this topic was discussed and am therefore delighted to see revived that discussion laying stress on the fact that our universities and colleges give so little attention to the teaching of the fine arts, with the result that the average graduate is no better qualified to serve on a building committee or a town-planning commission than any other free-born, happy-go-lucky, half baked American, rejoicing in the conviction that he can dive deeper and come up drier than any other man on earth.

Deeply appreciative of the sincere and ardent work being done by the professors of architecture in our thirty-eight universities and colleges where architecture is now regularly taught (but virtually only to future architects), on May 5, 1917, in my capacity as President of the Pennsylvania State Association of Architects, I addressed a circular letter to the heads of those thirty-eight seats of learning to try and ascertain if they regarded their own architectural department as anything more than a school in which to teach boys a way to make a useful living—in short, if they considered it a superior department or only in the same category with schools of engineering, domestic economy, dentistry, veterinary surgery, etc., it being my desire to ascertain how many really regarded it as a cultural department destined to exercise through its graduates and their work an uplifting, broadening and refining influence upon our people throughout the nation.

The five questions asked were in brief as follows:

1. Can not a way be found to call the attention of students, in all departments, to the fact that the practical art of architecture concerns them one and all?
2. Has your university ever bestowed honorary degrees upon an architect, town-planner or writer on art?
3. What ways can you suggest of spreading knowledge and appreciation of architecture?
4. Is there a need for art, for taste, for artistic discrimination, in the United States?
5. What is the average degree of art knowledge and appreciation among your own students?

Only two or three of the thirty-one replies from twenty-eight institutions were categorical answers, and indeed most of them dealt only with my letter in a general way, but all but one were apprecia-

tive, and many keenly so. Unfortunately, they were not, however, all from the presidents themselves, some having been referred to the heads of the schools of architecture whose opinions, of course, were well known. On the other hand, from Princeton, Columbia and the University of Kansas I received two replies and, in that my inquiry covered thirty-eight institutions and not merely the twelve composing the Association of Collegiate Schools of Architecture, the composite of these replies may be assumed to represent the feeling of the heads of representative and not exclusive institutions of learning where architecture is taught; and conversely, it may be safely assumed that less appreciation is felt in those institutions where architecture is not taught at all. In support of which, allow me to state that just a year before I held my symposium, Professor Holmes Smith of Washington University prepared a report on art instruction in universities and colleges of the United States in which he showed that out of the one hundred and forty-nine institutions his committee had investigated, only  $7\frac{7}{10}$  per cent of 221,442 undergraduates enrolled in these universities and colleges in 1914-15 received any art instruction whatever, while fifty-two of them offered no art for students to ignore! And here I might digress again to quote from Mr. R. Clipston Sturgis' report, made the following year, as Chairman of the Committee on Education of the American Institute of Architects, when he said: "As long, however, as colleges disregard the place the arts occupy in history, so long will preparatory schools be forced to omit teaching anything connected with art."

But I must return to the replies I received. President Nicholas Murray Butler of Columbia wrote that he was referring my letter to the Provost for detailed reply, stating himself, however: "I would say that we have in recent years conferred honorary degrees upon such men as the following, all of whom are associated in the public mind with the development in America of the fine arts, and some of whom are well-known artists: Charles Eliot Norton, Charles F. McKim, George B. Post, Edwin Robinson, Daniel C. French, Edward H. Blashfield." Dr. William H. Carpenter, the Provost, said among other things: "The suggestion which you make of having a professor of architecture lecture before the entire student body is one that I am thoroughly confident would be worth while and should be put into practice when it is possible for us to care for it financially;" and, again, "There is indeed a need for art, for taste

and artistic discrimination in the United States to-day. We have, I think, as a University this fact constantly in mind, and we are only too ready, willing and waiting to grasp every available opportunity that presents itself for an extension of influence upon our part in these directions," and once again: "Art is still to the American mind in general a book of seven seals that has yet to be opened to the public comprehension. Your letter has greatly interested me as an administrative officer of the University, and its suggestions directly and between the lines are greatly appreciated." President Hibben of Princeton is represented by replies from Dean West of the Graduate School and Professor Howard Crosby Butler. "Whether a lack of good taste is inherent in democratic peoples is a two edged question," wrote Dean West. "It was not a fact in democratic Athens. It is a fact in imperialistic Berlin. And, despite the marked recent improvement, beginning about 1880, it is an appalling fact in our own land. It is something of a mystery that it should be so, for Colonial America was a home of quiet taste. How did we ever lose it? I think, in part, from the vulgarization that set in with the advent of quick and economical production through machinery, making it cheaper to put up buildings that lacked the direct human touch in their making. Whatever the reason, the fact remains that most of our domestic and public architecture is unlovely." And further on: "Let architects of taste have some sort of public censorship over the design of all buildings to be erected. Let instruction in drawing and the simplest method of design be made obligatory in all schools. Let large permanent photographs of the finest historic buildings be in daily sight on the walls of every school. Let the art museums be multiplied and exhibit to every community casts and pictures of the best examples of art. Cultivate in teaching the power of *seeing* things. Too few use their eyes well. Let the universities provide thorough courses in the history of art, so that we may have a larger supply of architects who really know what is pure architectural style in each kind. Once the movement really starts, it will make great headway, for in America especially the process of public contagion is swift. But underneath it all is needed education in quiet, modest self-respect and in love of the things that make life noble. Whenever this happens, good taste will be the natural and almost unconscious result." Professor Butler's long and enthusiastic letter described the plan for the establishment of the school of architecture which would have been in operation now but for the interference of the war; in part, he said: "But the teaching of the history and appreciation of architecture is no new

subject at Princeton, having held a prominent place in the curriculum, in the department of art and archaeology, for upwards of twenty-five years." And again: "Out of a class of seventy-six in junior architecture last year only twelve were intending to study architecture as a profession." And here is something significant: "I may add that by general consent of the students themselves, even of those not electing art courses, our department draws the best all-around men in each class of about three hundred and fifty." And once more from his letter: "If the colleges are to undertake the task of creating a broad, general knowledge of art, and of making the homes for the rising generation centers of art appreciation, some means must be devised whereby a larger number, or all, of the students, at some time in the course of their college careers, shall be brought into contact with the teachers of art subjects." "I fully and entirely appreciate the value of architecture," wrote President Lowell of Harvard, "and have devoted some of my own time to amateur study of it. Harvard has conferred honorary degrees on architects and artists; has for more than a generation made fine arts one of its subjects of study, and at present has a number of courses in architecture for its undergraduates in college, given by the dean of the school of architecture." James R. Day, Chancellor of Syracuse University, wrote: "Your letter of May 11 interests me exceedingly. I agree with you when you say that our colleges and universities have a responsibility in promoting the development of good architecture in this country and that this can be accomplished by a general movement for a broader spreading of the significance and value of architecture. You ask how this could be done. Some of the ways which occur to me are, by publicity in the daily press and magazines, in articles written for the popular understanding, by lectures and traveling exhibitions of architectural work given and planned by competent men of the profession. Syracuse University will be glad to support such a movement to the extent of its ability."

Dr. Schurman, President of Cornell University, ended his letter as follows: "As regards the other points of your letter, I share your view that art has not yet found its just place in the scheme of education of our people. The most important thing to be done at the present stage, I think, is to instruct public opinion concerning this deficiency, and to seek in every way legitimate ways to awaken and develop healthy interest in art." He enclosed a prospectus from which I quote: "Of the fine arts — music, painting, sculpture, architecture — it is architecture which has been longest established at the University and has had the fullest



development." From Francis P. Smith, Professor of Architecture in the Georgia School of Technology: "In an engineering school such as this I think it is rare that you will find a student (other than one in the architectural department) giving any time, thought or attention to artistic matters." President S. M. Newman of Howard University, Washington, D. C.: "You will readily see that there is no attention paid here to art in any one of the forms of its manifestations in connection with courses of study. Of course I thoroughly believe that education is not complete until it has a development upon the whole side of life." Dr. Benjamin Ide Wheeler, of the University of California, found "much to sympathize in regarding the interests of the art of architecture;" and after reviewing the ignorance and indifference of the public said: "I am afraid the political architect is doing the profession just at the present time a good deal of damage. It is all the more necessary that those who are idealists should assert themselves," etc. And then he concludes, "Particularly mischievous is that member of a firm, and such a member generally exists, who is recognized as a good 'business-getter.'" Dr. Edwin E. Sharp, President of State College, Pa., wrote: "I imagine that the ratio of one to ten is about the way art stands to industrialism in this material age. We are trying to do what we can in our college, which is largely devoted to technical instruction, but we find it difficult to persuade students that there is anything more in life than a 'job.'" Dr. George E. Vincent, then President of the University of Minnesota, wrote: "I think universities like Minnesota can, through their extension divisions, accomplish a good deal in the way of popular education in architecture. If sets of slides could be prepared under the auspices of your Institute, I believe a good many universities would gladly purchase these slides, together with lecture notes that might accompany them. There can be, I think, no question about the need for higher æsthetic education of the people in the United States. I fear that the fine arts are much neglected everywhere. We at Minnesota cannot pride ourselves upon any marked variation from the prevalent apathy," etc. "If I were not leaving Minnesota, I could give you personal assurances that I should do all in my power to foster the art interests of the University community." Prof. J. T. Willard, of Kansas State Agricultural College, wrote: "There is doubtless very little appreciation of art in the United States, but I believe that our students are led to give more attention to this matter than they would had they not been here. Doubtless issuance of bulletins through the Agricultural Experiment Stations of the country

would bring some architectural knowledge to the rural regions where it is sadly needed." A. S. Langsdorff, Dean of Washington University, St. Louis, Mo., wrote: "The beautiful buildings of Washington University have had a very great effect in raising the standard of appreciation of architecture in this vicinity, this influence being very clearly seen when one examines many of the public school buildings, churches and other public structures. I am sure that so far as our own students are concerned, the silent influence exerted by our beautiful surroundings is very potent." Professor Biggin, of the Alabama Polytechnic Institute, wrote: "Dr. Thatch wishes me to tell you that it is the policy of the college to make the work of the department of architecture count largely with the student body, and that the professor in charge has been accustomed to give certain public lectures as you suggest. When possible, outside lecturers are also obtained for this purpose." Prof. Francis W. Kerrick, of University of Notre Dame, Indiana, wrote: "I can find no record of a degree being conferred upon an art worker. This is depressing enough," etc. "In 1883 the Latane Medal was given to Patrick Keely, an architect of some six hundred churches, and later to Miss Eliza Allen Starr, a lecturer and writer upon Christian art."

These replies, including the naïveté in the last one, are encouraging; but in the light of popular education in general they merely record the fact that architectural education for architects is years and years ahead of the public, and that there is at last, happily, an implied desire in some of the universities to help educate the public.

But it is neither just nor desirable that the cultivation of a larger appreciation of architecture should be left to the higher seats of learning.

Architecture is a universal subject touching life at too many points for that, therefore let us examine some of the other contacts and speculate upon what might be done through other sources.

The moving picture industry, now the fourth in importance in the nation, is a mighty power for good or evil. It reaches all classes everywhere, spreading new ideas and arousing fresh enthusiasms. What a teacher of architecture this universal medium might become if real architecture were used for the backgrounds and surroundings of its dramas instead of the spurious Universal City scenery! But popular lecturers like Burton Holmes and Elmendorf, however, do show pictures of the real thing — of the most beautiful specimens from all parts of the world, and they, moreover, each have a vast following among the most thoughtful people. Why not aid them a little with their descriptions? And again why should not the



Institute recognize them as it has the professors?

While the field of architectural journalism is covered better here than in any other country, the Journal of the Institute itself, especially through its illustrations, might do much more than it is doing. True, it has to its credit, through the energy and prescience of its accomplished editor, Mr. Whitaker, two educational campaigns of the most far-reaching significance, — one on government buildings and the other on housing.

Mr. Zantzinger, the present chairman of the Institute's Committee on Education, desires that the Institute shall become a member of the American Council on Education, and likewise is endeavoring to bring about ways and means for the publication of a text book on the appreciation of architecture for use in colleges and by the public, to be more or less under the ægis of the Institute — both excellent ideas. And furthermore he has wisely reorganized his committee to insure continuity of effort; it is now a committee of nine, three elected each year, with sub-committees on Architectural Education, General Education and Public Appreciation of the Arts.

Then the Episcopal, the Methodist and the Lutheran churches already have adopted plans whereby the designs for all their new churches are to be passed upon by competent committees of architects. What a field the church offers for propaganda! Of all the professions outside of architecture itself, that of the clergy is the most interested and best trained to spread the gospel of good architecture.

But bigger than any idea I have yet touched upon is the idea that came out of the Middle West when Mr. Thomas Kimball became President of the Institute. He realized that a new social order would have to be evolved in the wake of the war, and thereupon determined that the architect should do his proper part in bringing about this evolution. He realized that the problems of society, the reconstruction of the old order, would have to be faced; that the physical development of towns and cities would have to be studied along purely social lines, and lines, moreover, entirely in consonance with the spirit of true democracy. Thus he made it his policy to try and develop a system whereby both architects and architecture shall become indispensable members of the social fabric and not luxuries or exotics as we and our work are often regarded. What this Post-War Committee may bring about of course is problematical, but in that it has already brought about the holding of a successful national Inter-Professional Congress where professional men from fourteen professions came together from many parts of the country to discuss this vital question of the new social order and of a new kind of leadership, which shall be

neither plutocratic, political nor bolshevist; but a leadership of brains and high ideals seems to indicate that a more widespread influence and a greater sphere of activity is opening up to the profession of architecture. At any rate, it is the kind of educational work that is most needed at the present time; while under the constant leadership of professional minds the imagination of our people may yet become inflamed and be turned from the sordid, matter-of-fact things of industrialism to a contemplation of the sublime.

Through the Rotary and Kiwanis Clubs of the country much may be done; for some day "the plain business man" is going to wake up to the fact that he can neither afford to live nor do business in vulgar, sordid surroundings. He is going to learn that his motto, "He profits most who serves best," means something far beyond industrialism.

But Dean West hit the nail on the head when he said, "Cultivate in teaching the power of seeing things;" that is the crux of it all. Until bad architecture looks ugly and offends, few will care. Therefore, the writer believes that the next step in architectural education must be through the public schools, and that it may easily be made a light and a gay step along the road to happiness. Unfortunately the college boy is too old to learn to use his eyes to the fullest advantage, coming as he does, for the most part, from homes where there is neither artistic appreciation nor artistic curiosity. His ideas are already formed along grosser lines; he cannot get the same happiness out of beauty that the child can; and therefore, I think, that the work should be started among little children, who with fresh, eager, undimmed and unprejudiced eyes may be trained instinctively to see and enjoy the beautiful in everything. Of course it must be continued in the colleges, and if magnetic teachers — men and women of imagination and force — continue this work — teachers thus endowed, which is only another way of saying teachers wearing Tytyl's magic cap set with the wonderful diamond "which gives new light to dimmed eyes," the soul of things will at once become apparent.

In conclusion, considering the problem in the largest sense, it seems to me, that what has to be taught everywhere, in some way or other, is the joy that is to be found in the soul of things, while it must be made very clear indeed that the most precious diamonds are not to be found in the sordid dunghill of industrialism, glossed over as it often is with its varnish of art pretense; but, happily, that they may be found, not singly but in abundance, by any one who has "the seeing eye" and a genuine understanding of the good, the true and the beautiful.

# The Kitchenette Apartment

## II. SERVICE FEATURES AND EQUIPMENT

By CARL A. ERIKSON

IN the dining-kitchen, we revert to type; eating in the kitchen! but a kitchen our mothers, or grandmothers, would hardly recognize. We have marveled at the ingenuity shown in the Pullman dining car-kitchens and here we have it condensed for home consumption. No longer acres of "clear white maple" to scrub; no longer endless steps from pantry to kitchen to dining room, and no wonder the "help-less" modern wife greets these miniature kitchens with shrieks of delight. One step, possibly two, will bring anything in the larder on to the stove, two steps will return it, two more steps will put it on the dining table. An agile, long limbed woman might get the entire meal without moving—merely reaching and turning. On one side is the sink; on the other, the range and the kitchen cabinet; across the end is the refrigerator and a case. Above the refrigerator there are usually three compartments: one for garbage, one for milk, etc., and a third for parcels, groceries, etc. These compartments as well as the ice chambers of the refrigerators have a door opening into the service closet. In the higher class apartments, packages, milk, groceries, etc., are delivered to a clerk in the receiving room and at reg-

ular intervals distributed throughout the building. Only the hotel staff have keys to corridor doors of the service closets. Losses through theft are thus reduced to a minimum, and yet packages may be delivered without disturbing the tenants and regardless of whether or not they are in. In some hotels, packages, milk, etc., are not delivered, but the tenant must call for them at the receiving clerk's desk. In others (the ordinary construction) this is handled as in the ordinary apartment house by the tradesmen delivering at the door. Many ingenious contrivances have been developed for the safekeeping of these parcels during the absence of the tenant. The refrigerators are sometimes mechanically cooled. Whether the small units to be cooled justifies the expense of installation and operation, is questionable. Ordinarily ice, whether purchased or manufactured, is placed in the refrigerator from the service closet.

Waxed paper bags are furnished the tenant into which he places the garbage. This is then placed in a receptacle above the refrigerator from which it is removed through the service closet at regular intervals by the janitor. An opening is provided into the sanitary garbage chute at each floor. It

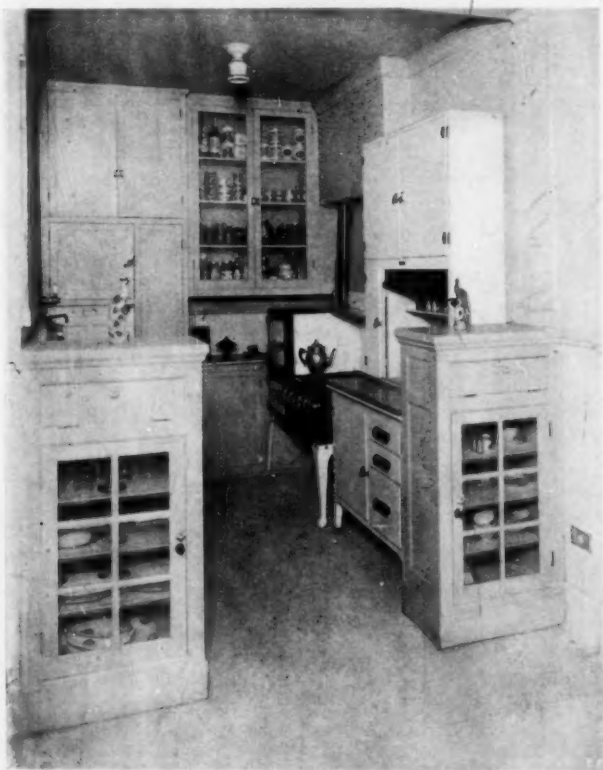


Fig. 8



Fig. 9

End Views of Dining-Kitchenette, the Surf Apartment Hotel, Chicago, Ill.

J. A. Armstrong, Architect



drops through this large sewer tile into a furnace in the basement and is burned, the chute then forming the smoke flue. This may seem to be an unsanitary makeshift arrangement, but it has proven very satisfactory. It is the only form of garbage chute, permitted by the Chicago Health and Building Departments. The manufacturers (it is patented) claim that no odors will be noticeable as there is such excellent draft in the flue, and that the heated gases passing upwards when the fires are started destroy any refuse that may have been deposited on the sides. The Chicago Health Department is evidently convinced. It may seem unpleasant to have the garbage hauled through the main corridors of the building, but this objection is probably more theoretical than practical. It needn't be any more so, than, say, the removal of rubbish and sweepings from the room. In some newer buildings it has been planned to provide these chutes for each kitchenette. This expense

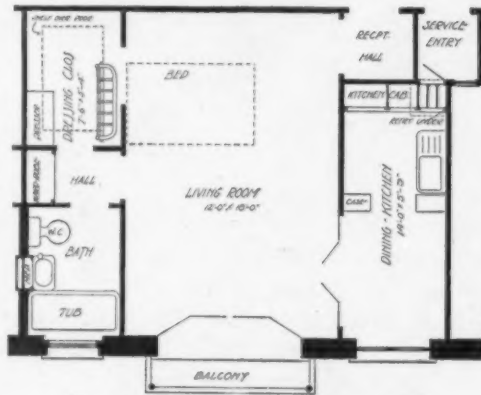


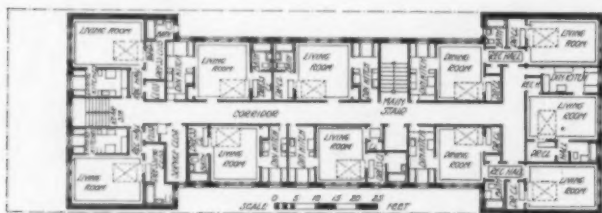
Fig. 1. The Two-Room Suite as a Unit  
(Reproduced from last issue for reader's convenience)

gas incinerators in each kitchen would probably not be warranted because of the cost of operation and of installation.

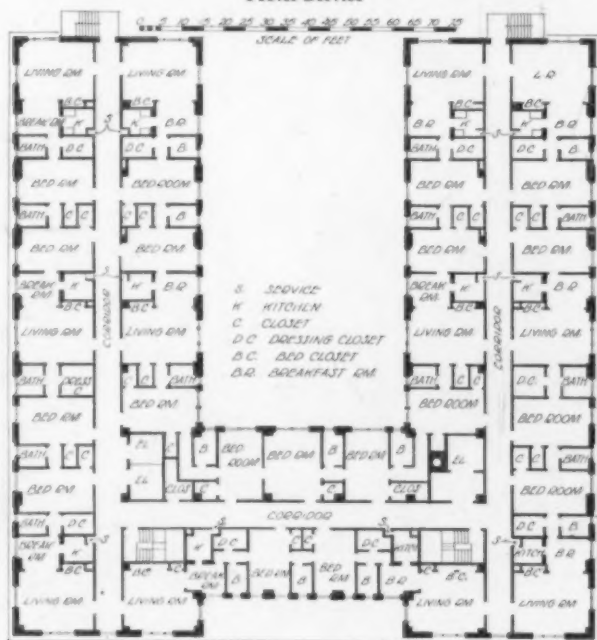
The service closet has, then, a twofold purpose: it acts as a guard against theft of parcels and insures that garbage odors do not enter the main corridor. If this were all, some less space consuming device would probably be arranged. It has a third important function, — that of buffer between the kitchenette and the main corridor for noise and cooking odors. The kitchen range hood is connected to ducts that are exhausted by fans. If to this is added a smaller volume of air moving out of the service closet, the main corridor should be free of the odors from the fragrant cabbage or the favorite spaghetti. It has been stated that in the higher buildings the movement of air through these ducts (without the fans operating) has been sufficient to keep the air in the halls fresh at all times. Whether this is true under all atmospheric conditions is problematical. It is needless to say that the tenant has no means of controlling the inlet to the vent ducts.

The equipment of the kitchenette requires most careful study (see Fig. 8). Space must be economized and yet every operation possible in a larger kitchen must be done here. In some apartments kitchen cabinets of well advertised fame have been used; in others similar principles have been used in specially designed cases. Cupboards of other types are also provided. The ever present broom must be cared for somewhere. An ironing board should be provided by the owner and arrangements made so that the inevitable washing and ironing may be done in the kitchen.

The kitchenette is separated from the dining room by china cases about 5 feet high, which shield the kitchen fixtures on each side from the dining room. The "diningette" has often been provided with built-in furniture, i.e., a table with benches on each side. This has not proven as popular as the movable furniture (see Fig. 9) because of its lack of flexibility and its awkwardness.



Plan Showing Two- and Three-Room Units with Limited Hotel Service



Apartments with Kitchenette and Non-Housekeeping Units  
Richard E. Schmidt, Garden & Martin, Architects



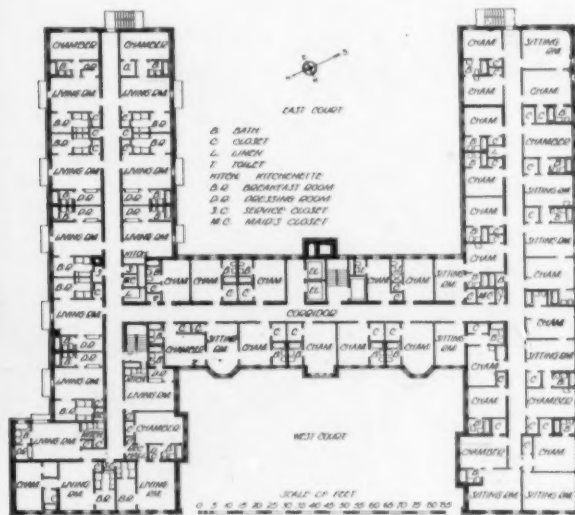


GENERAL VIEW FROM THE WEST



DETAIL OF MAIN COURT ENTRANCE

*THE ground floor of this building with its dining room, cafe, tea room, banquet or ballroom and service arrangements has very much the same accommodations as the metropolitan hotel. There are tenants' entrances on the south and west leading to a central office and spacious lobby opening on to a walled garden on the north of the block. Fourteen shops, together with the cafe, take the entire frontage of the two streets. With the exception of a small front entrance court the whole area of the rectangle is covered by the first floor layout. Interior views are shown on page 74.*



TYPICAL FLOOR PLAN

NORTH SHORE APARTMENTS, EVANSTON, ILL.

ROBERT S. DeGOLYER, ARCHITECT

In Fig. 1 the dining room and kitchen are indicated 5 feet 9 inches wide. This is almost, if not quite, the absolute minimum; ordinarily they are 6 feet 6 inches wide and upward. A dining room 8 feet wide and 10 feet long, or more, is desirable in the better buildings. The kitchen need not be more than 6 feet wide—more is waste—and only long enough to house the equipment, none of which can be spared. A receptacle should be provided in the dining room for the attachment of the myriad electric cooking devices. In the living room it is obvious that many of these receptacles are necessary.

Hitherto the accepted arrangement has been to assemble as many of these housekeeping units as possible on one floor. For economy the bathrooms and the kitchens are together. To fill in the corners three-room units have been introduced as at the "Surf." Experience has shown that a greater flexibility is needed, and in projects now under consideration two bedrooms and a bath are introduced between each pair of bedrooms. By this means almost any size family may be accommodated, either with or without kitchenette. It may be a two-room suite of plan Fig. 1; it may be one or two rooms with bath and no kitchenette; it may be three or four rooms and kitchen-

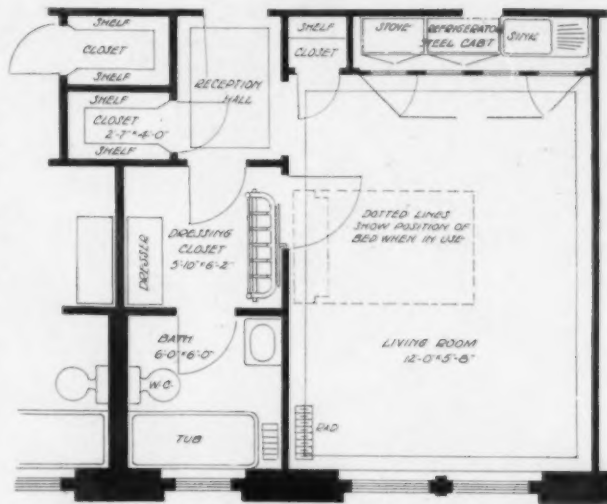


Fig. 10. Plan of One-Room Apartment with Fittings

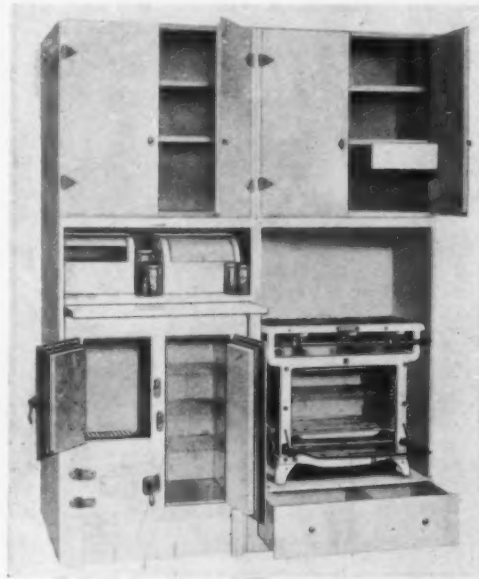
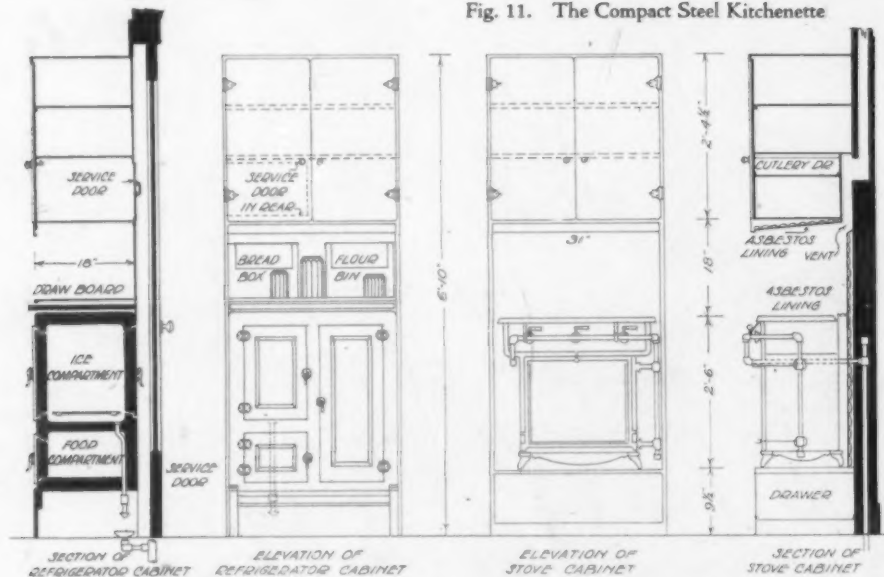


Fig. 11. The Compact Steel Kitchenette



Sections and Elevations of the Steel Kitchenette. Methods of Service from the Rear and Use of Insulation are Shown

ette. A building arranged in this way will fill a greater variety of demands from families than the less flexible arrangement and, during periods when the commercial hotels are crowded, it may be used to accommodate transient guests. In the North Shore Hotel both the kitchenette apartment and the hotel apartment are combined in one building, without this flexibility, however.

Another type of "condensed" apartment is illustrated in plan Fig. 10, in which the one room goes on a 24-hour shift, for it now combines not only the living room-bedroom, but kitchen and dining room as well. The stove and refrigerator and sink are concealed behind fourfold doors. The disadvantages are obvious, and its popularity is considerably less than that of the kitchenette type; whether this is counterbalanced by the reduced floor area cannot be determined except by consideration of each case. The cooking arrangement is shown in Fig. 11. A still further condensation of the cooking is shown in Fig. 12; the sink has parted company with its drainboard,

now perforated and placed above it.

The public floors of this type of building vary from the sumptuous appointments and splendor of the "North Shore" to nothing but a vestibule in the three-story apartment. Only upon analysis of the kind of tenants, the neighborhood and the rentals is it possible to determine the first floor arrangement. The "North Shore" is so largely an ordinary family hotel that it would be unfair to use it as a comparison were there not projects now on foot in which the public space is almost as large. The "Surf" indicates another solution. It should be borne in mind that the need for public entertainment space is not as great as in the commercial hotel, as each apartment has an acceptable living room. Public dining rooms, too, are smaller.

In some, shops have been found a profitable investment. Barber shops, hair dressing parlors, delicatessen stores, drug stores, are sometimes installed for the convenience of the guests, and a small cigar, magazine and candy stand is an essential in almost all of them. Dances are given at regular intervals at some places—at others, never.

Somewhere in the depths it will be necessary to provide storage space for trunks, extra furniture, screens and a large workshop. The maids, bell boys, waitresses, cooks, etc., must have their locker rooms as in the hotels. Where possible it is advantageous to have a separate locker room about 4 by 6 feet or larger for each apartment. In the higher buildings no laundry is provided for the guests, though occasionally there may be a "house" laundry. In the three-story buildings it is customary to provide a laundry for each six apartments.

The disappearing bed has

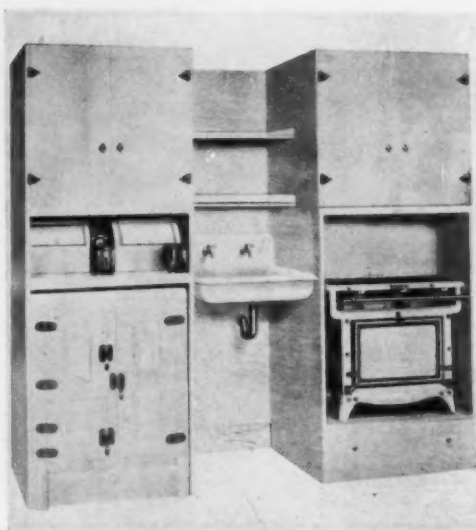
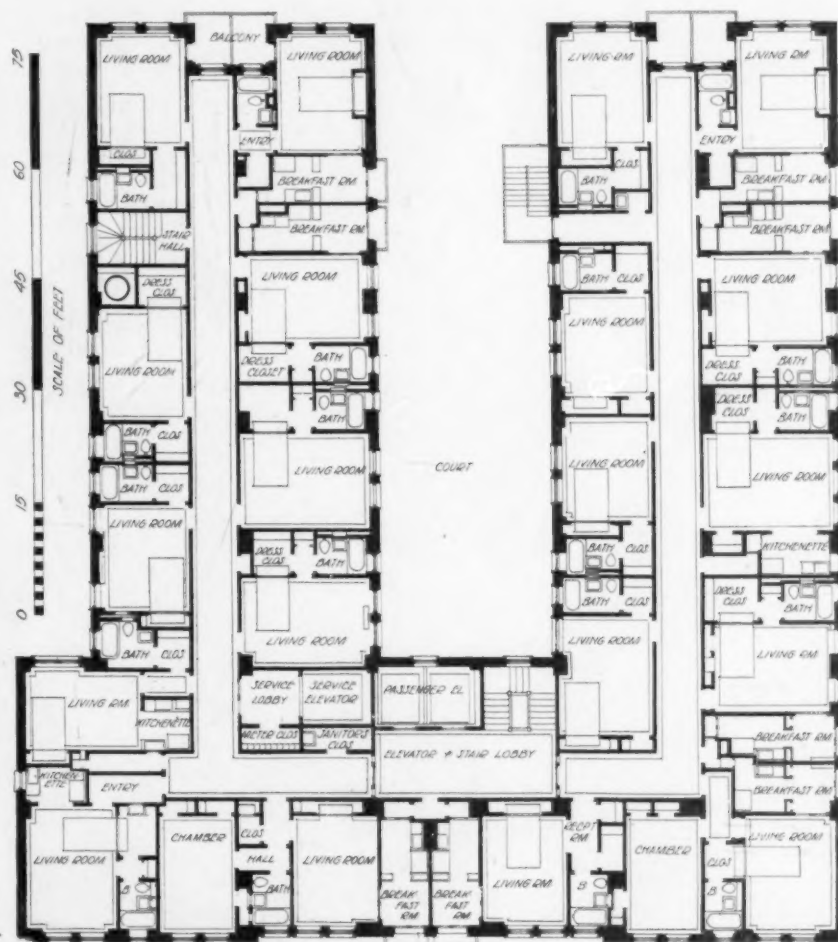


Fig. 12. Introduction of the Sink with Drainboards Above

been profitably used in the commercial hotel in the sample rooms—even the mighty "Pennsylvania" stoops to use them. Its use here will continue and it would not be surprising to see its use in the commercial hotel extend to many of the ordinary rooms. A number of residential hotels without kitchenettes have installed the concealed beds, generally with a dressing closet. The results have been very gratifying to the owners.

As the architects and their clients become better acquainted with the disappearing bed, the kitchenette and the cabinet kitchen, it is very probable that a far more extensive use will be made of them. For the inexpensive summer cottage with its "peak loads" they seem specially well fitted.



Typical Floor Plan, Wrightwood Apartments, Chicago, Ill.

Hall & Ostergren, Architects





Dining-Kitchenette and Typical Living Room of the North Shore Apartments, Evanston, Ill.

Whether these devices could not be used in the small, suburban house is at least a subject for contemplative speculation. Probably a courageous or "foolhardy" builder will some day convert this speculation into a more material one. Probably with profit for himself and, if perchance honestly built, with lasting satisfaction for the buyer. In the studio apartment these devices are obviously in place. In institutions of all kinds where it is necessary to house a large personnel, many of whom are married, many of the devices will do much to reduce the cost of building.

The tendency of most of us is to "pooh-pooh" and "bah-bah" the numerous new devices and schemes that are presented to us — a painfully de-

veloped, protective armor. But much as we may regret this slum-housing of the bourgeois, and, alas! even of the plutocrat; much as we may regret the passing of "14 rooms—8 baths—27 closets, its Grande Salon and its Salle-a-Manger, etc.," let us curse the immigration laws, if we must, but at least let us recognize the economic situation (a highbrow camouflage for shortage of help). The kitchenette apartments are the logical development of the steadily decreasing family quarters: a child, moreover, of the ordinary apartment mated to the scarcity of domestic help. The war and increased building costs have simply accelerated its birth.

NOTE. The Surf Hotel was published January, 1920.

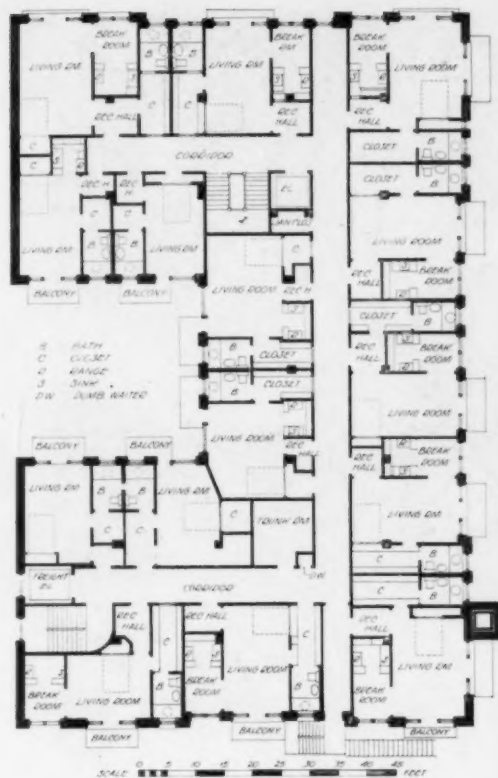


End of Main Lobby



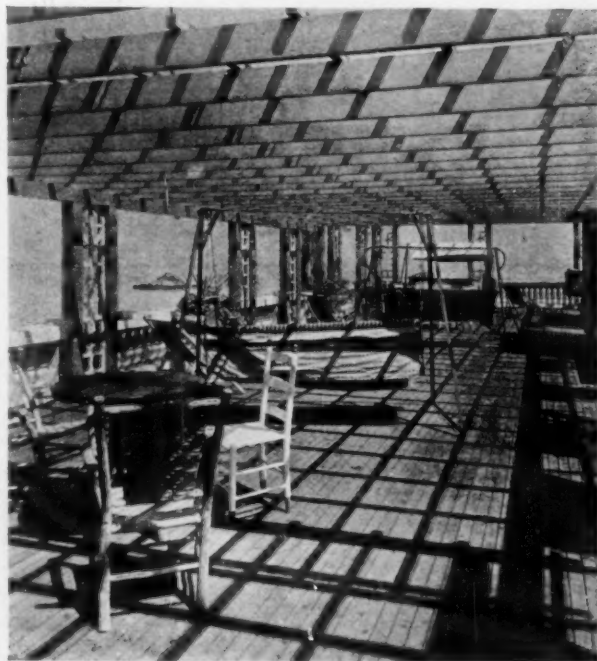
Tea Room

The North Shore Apartments, Evanston, Ill., Robert S. DeGolyer, Architect

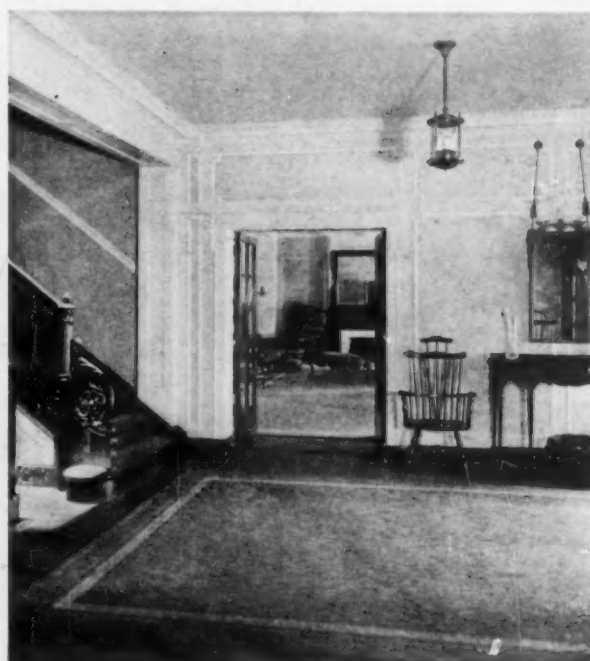


TYPICAL FLOOR PLAN

ON the ground floor of this building at the right of the main entrance lobby and office is a lounging room and behind this a ballroom with its anterooms. Two small apartments and a superintendent's quarters are on the left front. A common laundry, storage space and heating plant take up the remainder of the floor space at the rear. The kitchenettes in many of the apartments shown on the above plan open from the living rooms.



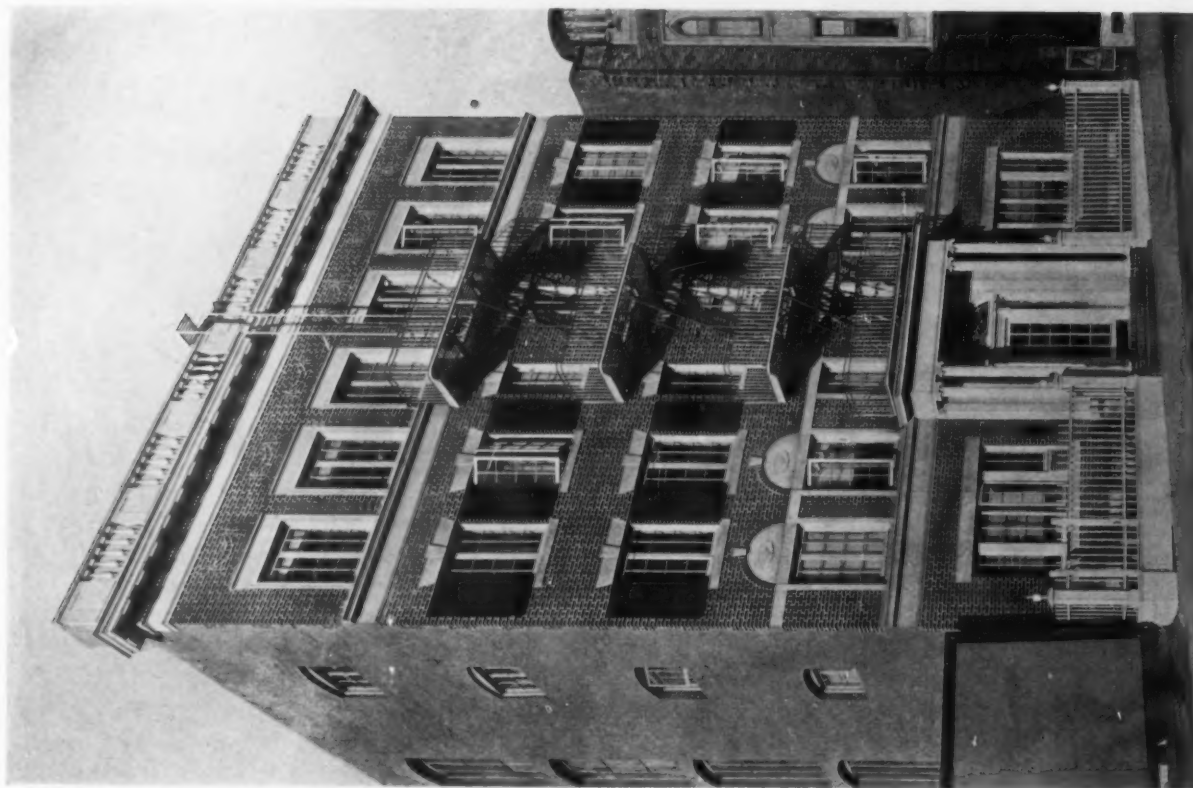
ROOF GARDEN



ENTRANCE LOBBY

EASTWOOD BEACH APARTMENTS, CHICAGO, ILL.

JOHN A. NYDEN, ARCHITECT



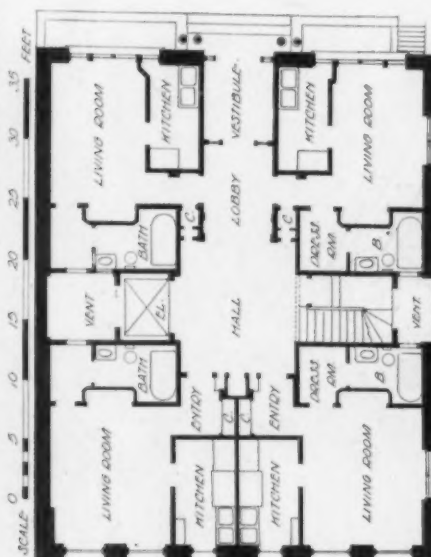
GENERAL VIEW FROM STREET



ENTRANCE LOBBY AND STAIR HALL

**THE** plan shown at the left is the first, or street floor, with vestibule and lobby entrance to the stair hall. On the second and above floors the apartments are symmetrical about the central hallway, being in pairs and typical of the rear apartments on the first floor.

The kitchenettes on the front of the building take over that space occupied by the entrance, and the living rooms are the same width as those in the rear with similar entries. A niche at the end of each living room takes a wall cabinet, and among the housekeeping conveniences are cold chests below the kitchenette windows.



RANDOLPH APARTMENTS, SAN FRANCISCO, CALIF.

HART WOOD AND HORACE G. SIMPSON, ARCHITECTS

(Formerly Wood & Simpson)



# The Y. M. C. A. Hotel, Chicago, Ill.

ROBERT C. BERLIN, ARCHITECT; JAMES GAMBLE ROGERS, CONSULTING ARCHITECT

**T**O the many young men that enter daily the large cities of the country in search of employment, hotel and living accommodations present a serious problem. Many are without sufficient funds to patronize the usual hotels, and the cheaper lodging houses often are in the midst of unpleasant environment. The need for simple quarters at a moderate cost has been recognized by the Y. M. C. A. and supplied in Chicago in a large hotel.

Its purpose is to provide a temporary residence in a wholesome environment for men of moderate means. Operating expense has been reduced to a minimum, with the result that a small bedroom, simply but substantially furnished may be secured for about 50 cents a day. Restaurant service of two kinds is provided: the main dining room is operated on the cafeteria principle and has space for 360 men; the lunch room, where service is entirely at counters, is located at the left of the hotel entrance with direct communication to the street.

The building is entirely fireproof, of steel, tile and concrete construction. It is nineteen stories in height, with basement and sub-basement, and oc-



Second Floor Stair Hall and Elevator Lobby

cupies an area of 96 by 165 feet. The exterior is of gray face brick and terra cotta.

On the first floor and connected with the entrance lobby are private offices where those in charge of personal service and relief work centering at the hotel may hold interviews.

The entire second floor is given over to lounging rooms. In the center of the space are writing rooms, newsstand, telephone booths, manager's office, etc. The rear lobby is used in the evening for an assembly room for lectures and motion pic-

tures. It has a seating capacity of 500 people.

The sixteen typical floors contain 1,821 small bedrooms. They are steam heated, well lighted and ventilated. There are no toilet facilities in the individual rooms, but at a central location on each floor are shower baths and toilet rooms. In order to maintain the expense of caring for rooms at a minimum, their use is not permitted guests between the hours of 9 A.M. and 4 P.M.

The top floor is occupied by a spacious laundry, which takes care of all laundry of the hotel and also that of the twenty-eight other departments of the Chicago Association.



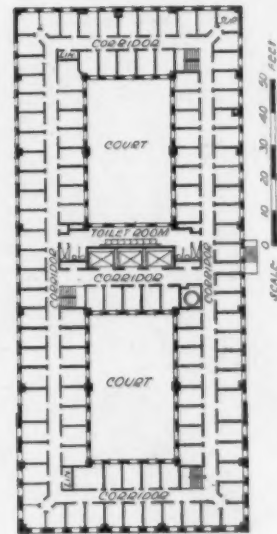
Dining Room on First Floor



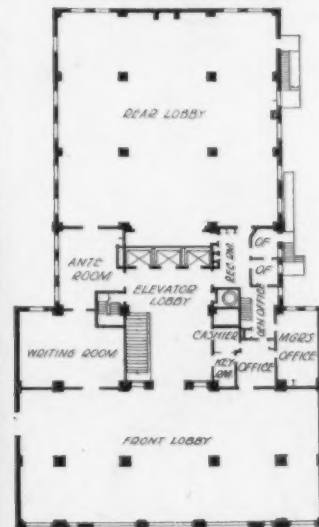
Front Lobby on Second Floor



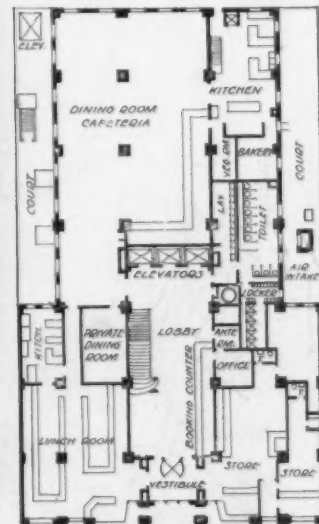
SOUTH WABASH AVENUE FACADE



TYPICAL FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN

THE Y. M. C. A. HOTEL, CHICAGO, ILL.

ROBERT C. BERLIN, ARCHITECT, JAMES GAMBLE ROGERS, CONSULTING ARCHITECT

# DEPARTMENT OF ENGINEERING & CONSTRUCTION

CHARLES A. WHITTEMORE, *Associate Editor*

## Heating and Ventilating

By C. W. KIMBALL

THE items of building equipment included in the above heading are generally grouped together and thought of as one proposition and one system. This is brought about, without doubt, by the fact that the two systems when installed in a building are often made to work together and to depend upon each other for their successful operation. Also, in certain installations, the two are so constructed that neither one is complete without the other.

The two systems a greater part of the time, however, are designed and installed for two separate purposes. The heating system is included as a part of the equipment to keep the building warm, dry and fit for occupancy or other purposes requiring warmth. The ventilation system, generally speaking, is included as an addition to the heating system to supply fresh air, remove odors, supply necessary humidity, and make the building more comfortable, healthy and desirable.

This last feature is coming to be used more and more commercially, and proper ventilation of the better class of theaters, stores, schoolhouses, shops, mills, garages, assembly halls and buildings of this type is required more and more by owners who benefit by their own and others' past experience, which proves that proper ventilation means increased revenue.

Both heating and ventilation systems have been improved and refined during recent years, and better working, simpler and more economical systems are now generally required, due to the resultant advantages of quietness and efficiency in operation. It is no longer necessary to install systems of heating requiring 20 to 30 pounds pressure to drive the steam and water through the piping and radiation, as in the past, when "noise" was a customary part of a heating system.

Any heating system, as a unit, reducing it to its simplest terms, means some arrangement of material and apparatus designed and constructed for the purposes of transferring the heat units released when fuel is burned in the furnaces, boilers or heaters, to the rooms or spaces to be heated. The term "heat units" used above refers to "British Thermal Unit," sometimes written "B.T.U.," and is the standard unit of measurement used throughout heating calculations.

This unit represents the amount of heat that is required to raise the temperature of one pound of water from 62 to 63 degrees Fahrenheit. As this term is used as a standard all through the subject of heating and ventilation, entering into a great many calculations regarding the heating value of fuel, heat transferred to steam, water and air, and heat released by these agents to the rooms to be heated, the following list may be helpful in illustrating the "heat unit" relation of different items:

High grade soft coal has 14,000 to 15,000 B.T.U. per pound.

High grade anthracite coal has 12,000 to 14,000 B.T.U. per pound.

Good grade of fuel oil has 18,000 B.T.U. per pound, or 150,000 per gallon.

Each square foot of cast iron direct steam radiation gives off 250 B.T.U. per hour.

Each square foot of cast iron direct hot water radiation gives off 170 B.T.U. per hour.

One cubic foot of air raised 0 to 70 degrees requires 1,435 B.T.U.

One square foot of single thick glass 0 degrees outside, 70 degrees inside, transmits 76 B.T.U. per hour.

One square foot of wall of house 0 degrees outside, 70 degrees inside, transmits 20 B.T.U. per hour.

One square foot of 12 inch brick wall, lathed and plastered on inside, 0 degrees outside, transmits 14 B.T.U. per hour.

One square foot of fan coil surface may transmit as high as 16,000 B.T.U. per hour.

One square foot of steam coil surface in hot water tank as high as 16,000 B.T.U. per hour.

All these quantities will vary as conditions change, but the above list will show some of the relative quantities.

The mediums most generally used to take up the heat units of the fuel when burned and carry them to the rooms to be heated, there to be released to warm the rooms, are air, water, steam and electricity, the latter, on account of cost, being used to only a moderate extent.

The different systems using the above mediums



are many and varied, but the following table gives an outline of the better-known systems:

#### AIR

- Hot air furnace systems.
- Hot air furnace systems combined with fans.
- Hot blast fan system (air being heated by fire, steam or water).

#### WATER

- Gravity hot water :
  - Open system.
- Gravity hot water :
  - Closed or pressure system.
- Forced hot water :
  - Pump system.
- Combined hot water and sprinkler system.

#### STEAM

- Vapor or very low pressure steam (4 to 8 ounce pressure).
- Low pressure steam systems :
  - One-pipe up feed.
  - One-pipe down feed.
  - One-pipe circuit system.
- Low pressure steam systems :
  - Two-pipe up feed.
  - Two-pipe down feed.
- Low pressure steam systems :
  - Three-pipe up feed.
  - Three-pipe down feed.
- Low pressure steam, Paul system.
- Low pressure, vacuum return system.
- Low pressure, vented open return system.

#### ELECTRICITY

- Using resistance units for heating radiators.

Each of these systems is and has been used as the basis of special systems with special names which will not exactly fit the titles given above, but an analysis will generally show that the special system depends on some one of these for its fundamentals.

#### Hot Air Furnace System

In general, this system includes a furnace set either in the basement or in one of the rooms of the building, with a cold air duct connected to the furnace from the outside air to supply the air ducts or flues leading from the furnace to the various rooms to be heated.

The furnace is either cased in and surrounded with a galvanized metal jacket or with brick walls to conduct the air from the cold air duct around and over the hot iron surfaces where it is heated, thence to pipes leading from the top of the casing or hot air chamber to the rooms to be heated.

The larger sized furnaces are often cased in with brick and have masonry heat ducts rising to the rooms above. With a fireproof ceiling over these furnaces and with a liberal size cold air duct supplemented by a recirculation duct to draw air from the rooms above when the rooms are not occupied, a high grade installation for small schools, lodges, churches, small shops and buildings of this character is obtained. Many schools have been heated in this way and the comparatively small installations are satisfactory, while the large ones requiring two or more furnaces do not usually operate as well.

Furnaces for heating should be limited to comparatively small houses, churches, halls, stores and buildings of that character. In fact, during the last few years the use of steam and hot water has become more general in these small buildings, as the better results seem to warrant the increase in the first cost.

#### Hot Air Furnace Combined with Fans

This system follows the same general lines as the one previously described, with the addition of fans or blowers to increase the speed and volume of the air through the furnace and to the rooms. Often an undersize furnace or one with insufficient pipe sizes can be made to operate satisfactorily if a small, motor-driven fan is installed that can be used on cold days to force additional warm air into the rooms.

Patented tubular or sectional furnaces have been designed to heat air in large quantities so that by the use of fans large buildings may be heated, taking the heat directly from the furnaces to the air. At one time this system was put on the market and the claim made that this way of heating would do away with steam and hot water systems. Defects in construction of the furnaces and difficulty in properly distributing the heat developed have caused this type of apparatus to be practically withdrawn. It was found very difficult to prevent cracking of castings, opening of joints, leakage of gas into the air ducts, and comparatively large loss of heat through the sides of the large air ducts necessary.

#### Hot Blast Fan System

This heading includes all the heating systems which are based on the principle of heating air at some central point and then blowing it, by the use of fans of various types, to spaces to be heated. For certain work this system has many advantages, as the apparatus with its fan, engine or motor, heating coils and steam piping is all centralized, and only hot air ducts of masonry or sheet iron

need be run to the rooms. This system also supplies fresh air for ventilation, as the air handled by the fan is generally drawn from out-of-doors. For foundries, shops, certain mills and other buildings where there is smoke, odors or dust in the air, this system helps materially to improve the conditions and to supply a limited amount of ventilation.

The main parts of the system are the fresh air fans (engine, motor or belt driven), the heaters (steam, hot water or furnaces) to heat the air, and the duct system (masonry or sheet iron) to distribute the air.

With this system it is customary to take the air from out-of-doors, heat it to 120 to 140 degrees, and supply enough air to change the air in the rooms from ten to fifteen times per hour. The fans must be proportioned to handle the amount of air indicated above without overspeeding, as this causes vibration and noise.

The fan may be located so as to draw its air through the heaters or to blow it through the heater, this heater being located in the main air duct, as best suits the plans of the building. In some cases part of the heater is located in the air duct between the cold air opening and the fan, and the balance of the heater is located beyond the fan in the discharge duct, so arranged with by pass ducts under or around these heaters with dampers in each duct as to give separate control of the heat to the different parts or rooms of the building where different temperatures are desired.

#### Hot Water Gravity System

The main parts of this system are the boiler or heater with its smoke pipe, trimmings, grates, etc., flow and return mains, risers, radiators, vents and expansion tank with its vent and overflow.

With this system the water is heated in the boilers or heaters, the heated water flowing by gravity through the supply mains and risers to the radiators where the heat is given off to the air. The water cooled after passing through the radiator flows back to the boiler. This action is based on the principle that heated water has a tendency to rise and cooler water to drop. The water is usually heated to about 140 to 200 degrees, sometimes a still lower temperature if ample radiation is provided, but never over 210 degrees.

In the up feed, two-pipe system the flow mains pitch upward from the boiler to the radiation and the return mains pitch downward from the radiators to the boiler, the mains being generally in the basement and the radiation all above the heater. There is also the one-pipe circuit system, so-called, where the flow mains feed the radiators

and the returns go back into the same pipe which gradually drops toward the heater. This system is used very little as the circulation is not so positive and even, as in the two-pipe system. Another system is the overhead down feed with the supply mains rising to a point above all the radiation, and the feed pipes dropping down to the radiation with returns extended from the radiators to the basement and thence to boiler.

As water when it is heated expands 4 to 6 per cent of its volume, it is necessary to provide an expansion tank to allow for the expansion and contraction of the water in the system as the degree of heat varies. This tank size varies as the amount of radiation required varies.

This tank in the ordinary system should be located well above the top of the highest radiator or pipe (the higher the better) and out of danger of freezing. It should have an open vent and a water-pipe connection with valve for filling the system with water and also an overflow pipe connected to a basement drain.

#### Gravity Hot Water (Pressure System)

The main part and description of this system are the same as the "open system" except as it applies to the expansion tank piping.

Instead of there being an open expansion tank vented to the atmosphere the tank in some cases is entirely omitted, putting on in its place an open relief valve and connecting the city water pressure with check valve directly to system. In other cases the tank is installed and a pressure regulating device is attached to the vent pipe from the tank to allow of raising a small amount of pressure (the amount being controlled by the regulator) on the water system, thus permitting the water to be heated higher than 212 degrees. This permits the use of smaller piping, due to the greater temperature of the water, and for the same reason the radiator sizes can be figured smaller. Many open vent or plain gravity systems which did not properly heat certain rooms have been fixed by putting this device on and raising the temperature of the water in the whole system, thus giving more heat for all radiators.

This feature of the system is a great help in larger installations, for by increasing the temperature of the water the speed of the circulation is increased all through the piping, and the radiators heat up more quickly than they otherwise would.

#### Hot Water System with Basement Tank

There has been patented and put on the market a system having the expansion tank in the basement, this tank having an air cushion to take up

the expansion and contraction of the water in the system with proper automatic devices to protect the system from too much pressure. This system is in successful use in houses and smaller commercial buildings.

#### Forced Hot Water System

This system is the same as the gravity system with the addition of a pump or pumps, which force the heated water through the entire system of piping and radiation.

The radiation surface should be figured approximately the same as for the other systems of hot water heat. It has been found that the most successful systems of this kind are those which limit the water temperature, leaving the main heater to 200 degrees as a maximum and allow approximately 30 degrees drop in temperature of water during the entire circulation.

With this system of heating the flow pipes to the radiation can be graded up or down, and the radiation can be above or below the heater, as the pumps force the water through the piping and radiation wherever located. To get an even circulation of water and distribution of heat the sizes of the pipes must be carefully selected, and in each branch of the system valves should be installed to regulate this distribution.

It is also necessary to have some method of caring for the change in volume of the water when it is heated or cooled. Some of the earlier systems had safety valves which opened as the water was heated and relieved the excess of pressure with a special water connection (with reducing pressure valve and check) from the city water mains. When the water in the system cooled and decreased in bulk this connection restored the volume balance.

The better and more recent systems have expansion tanks which are kept under approximately the same pressure as the system. A small air pump is provided which pumps air into this tank and thus provides an elastic cushion which expands or contracts to care for the change in volume of the water as the temperature varies.

One of the valuable points with this system is the fact that the temperature of the whole heating system can be varied with the weather. In other words, the colder the outside weather the warmer the water, and *vice versa*, thus a control of the whole heating system is possible at one point.

This system is adapted to factories, central plant systems, large buildings of all kinds—in

fact, to any large heating proposition except possibly where the building or parts of it are warmed only part of the time, and at other times the temperature is allowed to drop below freezing, such as in armories, storehouses, etc.

#### Combined Hot Water and Sprinkler System

This system, as its name implies, performs two functions through a single set of pipes,—that of fire protection by automatic sprinklers, and also a hot water heating system of the best type.

Starting with a standard wet sprinkler system, there are four additions necessary to make it a heating system as well: a boiler or steam heater for heating the water; tying the ends of the sprinkler laterals into a system of returns to the boiler or heater so that the water can be reheated; a means of insulating the sprinkler head from heat of the circulating water. This is a very simple device inserted between the sprinkler lateral and the head which removes any danger of the head getting hot enough to open—a method of taking care of the expansion and contraction of the water as the temperature varies.

The heating surface contained in the pipes of the sprinkler system will usually contain from 60 to 200 per cent of the amount required to heat the building, depending on its construction, location and occupancy. Any additional radiation needed is supplied in coils or radiators and made part of the system.

The combined system is best adapted to buildings having large open areas in the greater part, such as are used for warehouses, manufacturing plants, mercantile establishments and for large public garages.

The system has been in commercial operation for over ten years and has met with success when it has been properly installed.

#### Vapor System of Heating

Under this heading are included the systems of steam heating, which operate with a pressure of 4 to 12 ounces only in the supply main, with an open vented return system to allow the water of condensation from the radiators to flow back to the boiler, and the air expelled from the system to escape through one or more vent pipes to atmosphere.

There are many different ideas worked out and many different variations of this system, and it is sold and recommended under many different names.

*The vapor system will be discussed in further detail in the next issue. Mr. Kimball will also write on the vacuum systems. — EDITOR.*



## Inspection of Concrete

By BURTIS BROWN, C.E.

"TO accept or not to accept" seems to be the query of many architects when a concrete building is completed. Most building materials are made in a factory under expert supervision; whereas concrete is frequently made with a newly organized construction gang which does not know the fine points of the work, and it is under the latter conditions that the architect has his most difficult task. In order to have a finished structure with the required amount of strength and finished appearance, satisfactory materials must be used. The first consideration is therefore the inspection of the materials.

**Cement.** At present the mills are shipping cement of very satisfactory quality, and any cement obtained directly from the mills under the specifications of the American Society for Testing Materials can be depended upon. Cement bought in small quantities from local dealers should be watched.

Care should be taken to have the cement stored in a weather-tight building, with a floor at least one foot from the ground to allow for circulation of air beneath. Never allow the bags to be piled against the walls of the storehouse, as dampness often penetrates the walls. Keep each shipment separate, in order to identify any consignment.

On a construction of magnitude, regular laboratory cement tests should be frequently made. If there is not time to wait for the results of the laboratory tests, mix up a small batch of cement and sand, mould a 6-inch or 8-inch cube, also another of cement, sand and stone, and observe the action. With a very little experience one can tell whether the cement is satisfactory.

**Sand.** The really troublesome material in concrete making is sand. For some unknown reason there are some sands that cannot be used with certain cements. The bothersome sand with another cement may work satisfactorily. A field test at least should be made to ascertain whether the materials are usable, unless sand from the same bank has already proven satisfactory with the same cement. Cubes of sand, as mentioned above for cement, will afford a preliminary test.

Clean sand should be insisted upon.

If there is a stain left when the sand is rubbed between the fingers, the sand is not clean. Another test is made by filling a glass jar about three-quarters full of sand, to which is added enough water to cover the sand. After vigorously shaking and allowing the mixture to settle, if fine silt exceeds 5 per cent in height, have a complete laboratory test made before using the sand. Wash the sand if necessary.

The size of the grain of sand is not of prime importance, although it is worthy of some attention. To be considered as sand, the grain should not pass through  $\frac{1}{4}$  inch mesh and be uniformly graded to dust. By mixing two sands oftentimes a smooth concrete can be obtained.

**Stone or Gravel.** Whichever of these materials is specified, should be clean. Demand washing if an excess of dust adheres to either one. It is necessary to have the coarser aggregate clean. The size of the material should be called for in the specifications. The usual sizes are as follows:

3 to  $\frac{1}{4}$  inch mesh for heavy foundations or walls.

2 to  $\frac{1}{4}$  inch mesh for small foundations or walls.

1 to  $\frac{1}{4}$  inch mesh for reinforced work.

$\frac{3}{4}$  to  $\frac{1}{4}$  inch mesh for spirally reinforced columns.

**Water.** It is necessary to have clean water for mixing concrete. Any water clean enough for a public water supply will be satisfactory. If it is contemplated to use less pure water, have it tested for its action with other materials.

**Steel.** Reinforcing steel purchased from any of the steel companies need not be tested itself; however, care should be used in placing the reinforcement to have it located as shown on the drawings. In thin slabs as much as 40 per cent reduction in the strength of the slab may be made by the rods being raised only  $\frac{1}{2}$  inch higher than they should be.

See that the same number and size of rods called for is placed on the forms and securely wired in together. Either concrete or metal spacers should be used to hold the rods in position. Then watch carefully to see that the steel does not become misplaced while concreting. Sleeves, hangers, anchors, etc.,



Fig. 1



Fig. 2



Fig. 3

should be securely in place before concreting begins. Fill sleeves with sand to prevent concrete from filling them while pouring.

**Forms.** During the erection of all forms there should be inspection to prevent a break or settlement while the concrete is being poured. Have boxes placed on the forms where openings are to be left in the floor. Forms should be constructed so the bottoms of beams and girders, also the struts beneath, may remain undisturbed for a longer time than the slab bottom or beam and girder sides.

**Concrete.** Be sure to get the proportions called for on the drawings or in the specifications. If necessary, have measuring boxes built for the amount of sand and also for the stone to be used. The wheelbarrows, carts or buggies used to convey the aggregates to the mixer should be marked and care taken to see they are not overloaded.

The proper consistency or wetness of the mix is still debated, but wet mixes are favored for practical work. Due to the different amounts of water there may be in the sand or stone piles, the amount of water cannot be specified as a percentage of the volume of the aggregate, but must be judged by the resulting product. Concrete of such consistency that it must be handled quickly to prevent its running off the shovel, is a good rule.

Machine mixed concrete is to be preferred, but good concrete may be mixed by hand. Concrete is properly mixed when every particle of sand is covered with wet cement, and every particle of stone is covered with mortar.

Convey the mixed concrete from the mixer to the forms as quickly as possible and in such a manner as to prevent separation of the various parts of the mixture. There is a difference in the time of set in various cements, so that a definite time limit cannot be given. No concrete should ever be allowed to be deposited in the forms if it has its initial set. Always wet the forms before placing concrete. Continue to wet the forms as the work advances. If possible, have a richer mix used at the beginning of the work, because some cement will cling to the mixer, the hoist and wheelbarrows; besides the first batch is usually spread quite thin on the forms. It is most satisfactory to have the first batch of mortar "no stone."

Have the work as monolithic as possible. Pour the columns and walls carrying floors at least four hours in advance of the floors. It is better to pour them a day ahead. This is to allow for settlement in the columns and walls, and saves cracks in the floor around the columns. In flat slab work, never pour the column above the point where the capital flares. Keep spades and chisels busy while pouring beams and columns to press the stone back from the surface. Screeds should be placed on

forms at the grade of the finished work, then a straight edge drawn from screed to screed, thus leveling off the surface of the concrete.

Bulkheads should be placed where joints are to be made at the end of a day's work. Joints should be made where the shear is zero, or nearly zero, and the steel is carrying all the tension and the concrete all the compression. The joint for a beam and girder type floor is shown in Figs. 1 and 2 and for a flat slab floor is shown in Fig. 3. Never make a joint at the edge of a beam or at the edge of a column. Arrange the work so the break at noon hour will come as nearly as possible to the same location as a joint at the end of a day's work.

Prohibit men from walking on the fresh concrete. Wet the concrete in hot weather to prevent too rapid drying or protect it with canvas. In cold weather, heat the materials and use artificial heat to warm the concrete until set.

Keep a record on a drawing of the section concreted each day. Note the date, the weather and temperature at 8 A.M., 12 noon and at 4 P.M. Compute the yardage for each day's work and check with the number of bags of cement used for the volume of concrete.

**Removal of Forms.** Nearly all failures occur when the forms are removed and the ordinary diagnosis is "premature removal of forms." Every one knows there is a great difference in the rate of drying at various seasons of the year and on different days. It depends to a large extent on the amount of moisture in the air and the temperature. In cold weather, below 40 degrees F., concrete hardens very slowly.

The first test usually made by a practical man is to press his finger against the concrete or to knock it with his shoe. If these tests are satisfactory, he may try driving a tenpenny nail, and if the nail bends double, it shows that the surface is hard at that particular spot. Several tests are necessary to make sure that the nail has not struck a stone. The ring of hardened concrete when hit by a hammer is another indication of sufficient setting. If it is suspected that the concrete is frozen, apply heat with a torch to see if beads of moisture appear. Never remove forms from frozen concrete.

The following rules are to be used with discretion for the time of removal of forms:

	Days in Summer	Days in Winter
Sides of columns .....	2	4
Slab bottom and side of beams .....	6	14
Posts under beams and girders provided posts are left longer for large girders .....	10	21 to 30
Forms for thin retaining walls .....	2	5
Forms for thick retaining walls .....	1 to 3	4

For winter work count only the days when the temperature is above 40 degrees F.



## Interior Decoration

### FRENCH ARCHITECTURE AND DECORATION OF THE REGENCY AND LOUIS XV

By MATLACK PRICE

ARCHITECTURE and decoration in France following the long and powerful reign of Louis XIV are as generally familiar to-day as they are generally misunderstood or misvalued.

In architecture, as in history, we are rather inclined to accept certain ready-made premises to which the mere constant repetition from year to year adds weight and substance. Baroque architecture, for instance, is almost unanimously dismissed as unspeakably atrocious, and the style of Louis XV as decadent and immoral. True as these statements may be in some directions, their acceptance as the whole truth is unfortunate, and a little sympathetic study will reveal a great many beauties and merits which the sometimes ruthless

architectural historian has obscured by a smoke-screen of anathema.

The present paper, concerning itself with the style of Louis XV, will endeavor to pick out from an admittedly large amount of decorative frivolity and license certain fundamental merits and excellences of design which hold a very real message for the architect and decorator of to-day.

The span of the style is given by the most accurate architectural historians as extending from 1710 to 1770, and covering contemporaneously the English reigns of Queen Anne and the first three Georges.

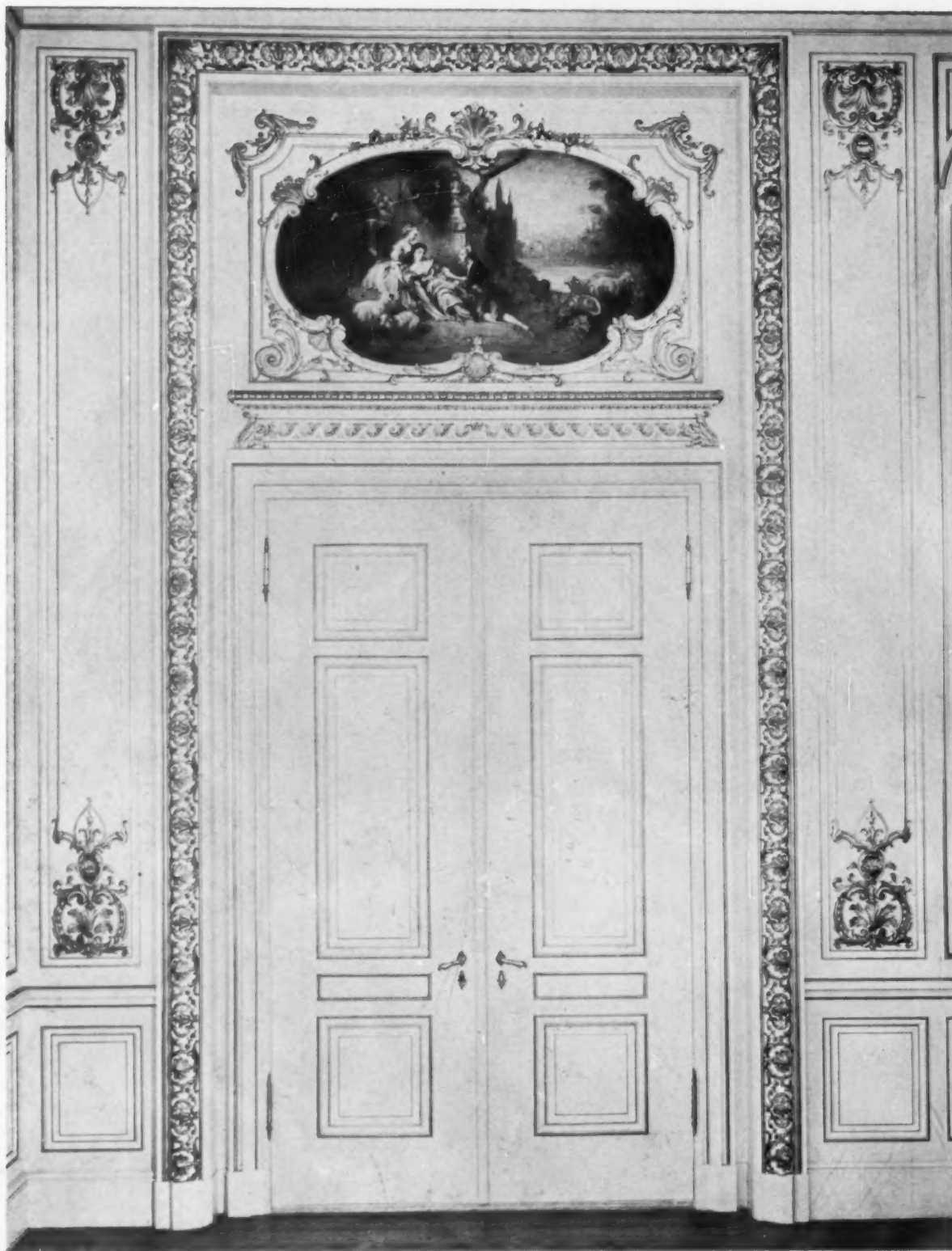
Architecture and decoration under Louis XIV, dominated and directed by centralized and bureau-



Drawing Room in the Louis XV Style, New York City Residence

A. J. Bodker, Architect





A LOUIS XV DOORWAY

TROWBRIDGE &amp; LIVINGSTON, ARCHITECTS

An interesting example of the modern restrained handling of the style. The illustration shows the characteristic over-door treatment with inset painting and the decoration of the wall panels. The ornament is in gold on a cream ground

cratic control, had exhibited a continuous struggle between Classic Renaissance Palladianism and late Renaissance Baroque, with the powerful influence of J. H. Mansart and his followers keeping the balance fairly well down on the side of monumental formalism.

With the dissolution of dominant official control of architecture and the fabrication of decorative materials and accessories under the Regent, Philip, there was a great artistic insurrection in which (if one failed to see beneath surface manifestations) all rules and conventions were thrown overboard to make way for unbridled license.

At this point the usual historian forces upon architecture and decoration an absolute identity with the life and morals of the period, and the result is a distinct verdict to the effect that all things pertaining to the period of the Regency and Louis XV are in flagrant bad taste and utterly unfit for modern use.

It must be said, however, that this indictment is so nearly true, and its margin of untruth so narrow, that it is by no means difficult to understand its prevalence. But it should not become an established fact, or a great injustice would be done to a group of brilliant architects and designers of the period, and the architects and designers of to-day would be the losers in failing to participate in their heritage of a very real and vivid, even if peculiar, kind of inspiration.

It should always be remembered, too, that the remarkable art of the period of Louis XV in France has suffered more than the art of any other period from base imitations. And so much of the work was purely inspirational, purely a thing of its own time, that its imitation by another people, in another age, could not but be vain and meaningless.

The style of Louis XV is not a thing to copy to-day, excepting by designers and decorators of rare ability and sympathy; it is not the tangible achievements of the Louis XV master-designers that we should seek to revive, but rather the genius and constructive imagination of their minds which made their masterpieces possible.

A conspicuous identity, certainly, is true of the life and art of the time. The fashion for sumptuous châteaux and town houses became even more general under the Regent and Louis XV than under Louis XIV. Luxury and the refinement and com-

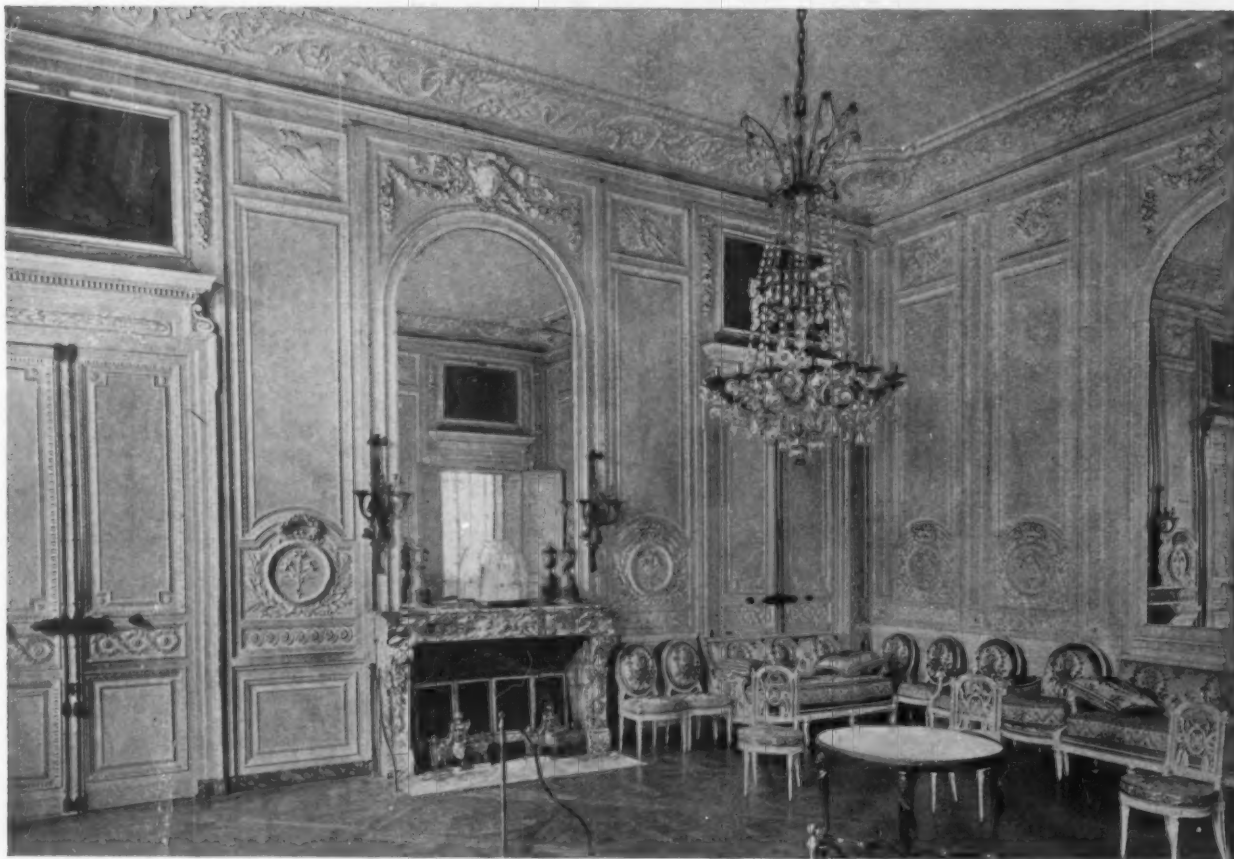
plexity of household equipment increased, and the aristocracy, free of the heavy formality and pomp imposed upon social intercourse by *le grand monarque*, turned to extremes of frivolity and extravagance. It was a period of whim and fantasy and caprice, reflected in every detail in contemporary art and decoration. The Court, and society in general, took a fancy, entirely for the sake of novelty, to play at pastoral rustic life, and gave elaborate outdoor entertainments in which the guests appeared as shepherds and shepherdesses. These and the more formal and immortally charming *fêtes champêtres* come down to us in all their picturesque gallantry in the decorative paintings of Watteau, Lancret and Boucher.

As though the fantastic compositions of "rock-and-shell" motives were not sufficiently gay, frivolous and unacademic, the designers desired decorative arrangements of Chinese motives which had just become known through the importations of the early Dutch traders, and from these "Chinoiseries" there was another nimble veering of fashionable caprice to "Singeries," in which the principal figures depicted were monkeys tricked out in the fashionable human raiment of the hour.

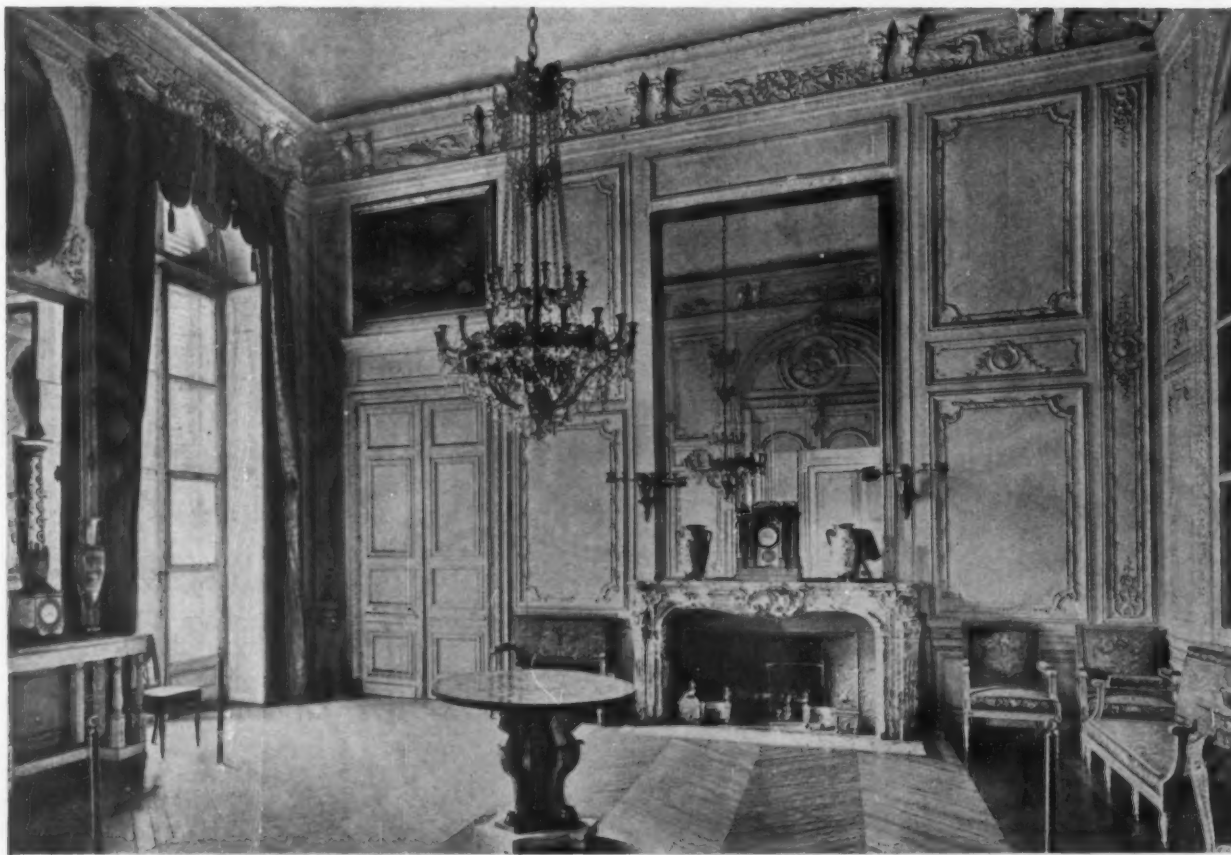
Such decorations were far removed from the architectural and monumental style of Louis XIV, but the whole idea of interior decoration had



Antechamber in Le Petit Trianon, Versailles, France



SALON, LE PETIT TRIANON, VERSAILLES, FRANCE



ANTECHAMBER OF THE KING, LE GRAND TRIANON, VERSAILLES, FRANCE



changed from the great formal apartments of the previous reign to rooms of a much more intimate kind — the *boudoir* and the *cabinet du conseil* and *petite appartements*.

The style of the Regency, being transitional from one period to another, did not possess many marked traits of its own, except to forecast in a large measure the conspicuous changes which were to take place a little later. There exists, perhaps, a certain amount of confusion in distinguishing the several rather loosely applied designations of the styles and sub-styles of Louis XV — such terms as "Rocaille," "Rococo" and "Pompadour."

The Rocaille style is not strictly synonymous with Rococo, for it applies properly to the school of design which was based on rock formations of the artificial sort employed in devising the elaborate grottoes which often formed a feature of the elaborate gardens of the period.

The Rococo style was evolved from a combination of "rocaille" motives and "coquille" or shell motives, combining in its name an elision of the syllables. Madame de Pompadour, one of the royal favorites, although a liberal and enlightened patroness of the arts, did not exercise nearly so great an influence as Marie Antoinette in the reign of Louis XVI, and the designation of any phase of the style of Louis XV as "Pompadour" is as meaningless as "Du Barry."

Among the great decorative designers of the day were Verberet, Rousseau, Oppenordt and Mes-sonier — and the analytical student of their works must admit them to be, in some respects, greater designers — certainly more brilliant designers — than the masters of more formal and balanced styles.

Here we reach the most important point involved in the true appreciation of any work of the period of Louis XV. Granting all its fantasy, all its radical departure from academic precedent; granting even much of the "immorality" of its antagonists, there was always, underlying virtually all the decorative work of the period, a tremendous sense of *design* — even a sense of pure design.



Example of Brocade from the Louis XV Period

We find it in the creations of Mes-sonier, for instance, which possessed at least as much of a sort of mad, elusive symmetry as the two figures in a Bacchanalian dance. Here is the essence of it: "His decorative foliage is swept upwards as by a whirlwind. His architecture appears to have passed through a semi-fluid state, during which it was agitated by a violent swell or convulsed by an earthquake before solidifying. Piers, entablatures, steps and balustrades bend backwards and forwards, surge up and down like the crests and troughs of a billowy sea. No element of chance, however, enters into these effects; they are the calculated result of a conscious art, seeking its effects by an elaborate system of balance and grouping."

The style, then, as exemplified by others as well as Mes-sonier, was by no means a mad and unbridled riot, without plan or direction, but actually an example of the very heights of attainment in sheer *design*. And that is the most important thing to remember about it.

The apparently fantastic curved heads to panels and mirrors, the seemingly unstudied collision of straight and curved lines (which seemed never to hurt each other), the profusion of detailed ornaments and decorative "attributes" — all these were studied with unerring niceties by master-designers whose like is not to be found to-day on either side of the Atlantic.

Even the most fantastic compositions possessed a symmetry in *decorative value*, even if not in actual form or contour, and there was always a strong sense of the function and *direction* of ornament. Decoration was either confined to such locations as panels, over-doors or spandrels, or was given a specific purpose as part of a whole design.

During the whole period, furniture, tapestries and superb decorative fabrics, metal work and intricate wood carving, came from the hands of accomplished designers and artisans; it was consistently a period of marvelous workmanship, as, indeed, was necessitated in the technical execution of such marvelous designs.

Let those who would disparage the works of this brilliant period of French art look at our own art of to-day to discover any elements of the vivid spontaneity and the inspired creative vigor of the style of Louis XV. Nor was there absence of thought for the architecture of the future, despite the seeming disregard for rule and procedure. The members of the Academy, which was definitely established in 1717, numbered forty toward the end of the reign, and though many of them fell in with the spirit of the times in their work, they were officially and at heart believers in the Classic Ideal and Palladianism and sent students to Rome. At this time, too, the first *ateliers* were opened and there commenced the strong architectural training which has ever since been drawing students from all parts of the world to study architecture in Paris.

It was because of this strong, preceptorial quality

in the French architecture of the period, as well as owing to the massive framework of sound architectural principles established under Louis XIV, that the transition to the pure and restrained classicism of Louis XVI was possible.

The profusion of the decorative genius of the period of Louis XV, the curvilinear furniture, the delicate carving and gilding, the flowing curves and fantastic motives were, after all, but surface expressions: they did not mean a fundamental reversal of architectural principles, and for this reason should not be taken too seriously.

It was not a conservative period, and it bequeathed to latter-day architects an ideal style for theaters, hotels, salons and ballrooms — if latter-day architects can perform the mental feat of *thinking* the thoughts of the Louis XV designer, rather than the mechanical feat of copying the things he did.



Louis XV Room in the New York City Residence of Harry Payne Whitney, Esq.

Probably the most perfect example of the style in this country. The mantel is Louis XVI, also the mirrors, but the decorative ornament is essentially Louis XV. The furniture with tapestry covering is of the best period of Louis XV

McKim, Mead & White, Architects; Stanford White, Decorator



# Building Specifications

By WALTER W. CLIFFORD, Associate Member A.S.C.E.

THE three R's which were considered the backbone of elementary education, within the memory of some now living, have their analogy in specification writing in the three C's. Clearness, completeness and conciseness are the essentials of a good specification.

Specifications and drawings being supplementary, much information may be placed either on the drawings or in the specifications. But duplication has the disadvantage that carelessness, such as a change made in one place but not another, leads easily to conflicting information. Economy also dictates that information will be given in one place only. An exception to the foregoing is the "In General" paragraph of the various divisions of the specification. In these it is often well to summarize concisely that division of the work.

Many factors enter into the choice of medium for conveying various parts of the information needed to construct a building. Typewriting is cheaper than lettering on tracings. Too many notes on a drawing make it very confusing to read. Certain drawings of building cross sections, happily not representative of modern practice, have complete specifications written over them at various angles and in various colors. A brief study of such a drawing suggests many things not to do. Certain information, however, is more accessible and more conveniently used if placed on drawings. A good criterion in this matter is to place on the drawings notes of the type and extent of the sundry materials of which an edifice is composed, and in the specifications the necessary additional information about their quality and workmanship.

Such notes as are made on drawings will, as far as possible, be grouped in a convenient location, commonly near the right hand margin. Certain information such as the words "brick," "limestone," "terra cotta," etc., on elevations will be placed for convenience on the face of the drawings where the materials occur. The rest of the information, such as floor grades on plans, type of flooring, standing finish, etc., will be placed in the collected notes.

Whatever division of labor be made between drawings and specifications, it is very important that each office have definite standards or at least well crystallized custom in the matter. Leaving the decision to the individual preference of various men is sure to lead to confusion.

The trend of modern architectural practice toward large and complex organizations makes the choice of the specification writer an important matter. In the one-man office the specification

writer is sure to be properly informed about the drawings and any peculiarities of each job. In the larger offices, unless the organization is very good, specifications are sometimes written by men who have not sufficiently intimate knowledge of the various jobs. In many large offices a single man, with or without assistants, writes all the specifications. This man usually has no particular responsibility for the drawings, and it is very difficult for him to cram sufficient knowledge of the peculiarities of the individual job to write a good specification. In organizations of this type, excellent co-operation is required for successful work. It is often helpful if the man in charge of the drawings makes notes as the work progresses for the assistance of the specification writer. The man in charge of the drawings should also check the specifications if he is not their writer.

In some offices a man is assigned to a certain job, and devotes to it his whole time. Such a man usually writes the specifications and supervises the drawings. With this type of organization some jobs may have less expert specification writers than in the type previously mentioned, but their greater familiarity with the work more than offsets this, especially if there is a good office standard specification. This latter type of organization may be enlarged if the size of the work and extent of personnel warrant by assigning a man to each of the divisions of a job, such as — architectural, structural, mechanical and electrical. This division of labor has the previously mentioned advantage of thorough familiarity with a job. It requires common responsibility to some sort of office manager, and most of all it requires close co-operation.

The time to write specifications is not open to great differences of opinion. In the early or tentative stages of a job, outline specifications as well as preliminary sketches are often gotten out for approximate bids. The final specification cannot, however, be written until the drawings are near completion.

Methods of specification writing divide themselves into three classes, which may be called the haphazard, the synthetic and the analytic.

The haphazard method is that of the man who has no standard or system. A few old specifications of jobs similar to the one in hand in that they were buildings, and a greater or less assorted knowledge, often make up the raw material; scissors and paste, the tools. Quotations are mixed "to the satisfaction of the architect." The



result is a reminder of the military system of correspondence: when in doubt, put down the next number and take a fresh start. For a candid opinion of this method, turn a sympathetic ear to any contractor. He will tell perhaps how he discovered a nice description of a marquise in a recent specification, and after spending half an hour trying to find it, or even a likely place for it on the plans, went to the architect's office only to find that it did not belong in the specification at all. The contractor can probably quote many instances where ambiguity, omissions and misplaced items have wasted his time and cost him money. When the three C's are neglected, some one pays the bill.

The synthetic method is a name we may give to the various systems of "Card Specifications." Individual paragraphs are kept on separate cards, systematically filed and indexed. The individual specifications are composed by combining the proper cards. With sufficient system the entire specification can be ordered of the stenographer by catalogue numbers, so to speak. This method gives good results. Its salient weakness is, that specifications so drawn often lack coordination and logical arrangement.

In the analytic method the individual specification is prepared mainly by deletions from a standard building specification complete for the type or types of buildings handled by any specific office. This standard may be a multigraphed or printed form. It should contain complete text for all material specifications, and all workmanship requirements. For details of construction, paragraphs may be included for things which occur most frequently, and blank spaces left for other items. In such blanks there should be a note such as, "Include here all miscellaneous metal work except structural steel, and bronze or brass work," or, "Include here all pressed steel window frames, doors, door frames and trim. Wood frames should be included under 'carpentry.' Tinned doors and galvanized iron sash should be included under 'Roofing and Sheet Metal Work.'" Copious side notes should also be included in the form. By their use, certain parts may be marked for omission in a "short form," and useful reminders of matter to be added in other sections, when certain materials are used, may be included.

The advantages of the analytic method are its ease of use, the insurance against omissions, and the assurance of a clear and logically arranged result. However, there is no royal road to specification writing. Whatever method is used, hard and skilful work must be put into a specification if it is to be clear, complete and concise.

The synthetic and analytic methods of specifica-

tion writing imply an office standard. Most large organizations have something of this kind, and all offices should have one. Specification weaknesses can be largely obviated by a well planned standard. And in addition to the satisfaction and publicity value of a good specification, with a good standard the individual specification will be lower in cost. An office standard specification is a very important thing and worthy of the talent of the best men of an organization. To write or revise a standard specification, it is necessary to start with the main headings and work down to the individual paragraphs. Once down to the trivial details, the big troubles are out of focus.

In an organization large enough to include experts in all lines, each main division with its standard order of secondary divisions may well be turned over to the expert in that particular line to work out the details. In a smaller organization, a main item may well be given to some one to study by reading and consultation with contractors and others. Even if the person is not sufficiently experienced to complete satisfactorily his part of the work, he can gather and arrange much valuable information, and by so doing be of great assistance. When an organization lacks experts on certain divisions of the work, it is well to admit it — within the sanctum sanctorum — and get some expert help on the subject. Some member can take care of the individual specification if he has a good standard and has followed its making.

In arranging the main items, brief notes on what is to be included in each should be made. As far as possible these headings should be separated as are the sub-contracts on the average job, and considerable study is necessary to accomplish this. In case of doubt, contractor friends may well be consulted. "Concrete Forms" under "Carpentry Work," "Hollow Metal Sash" under "Light Iron Work," or "Stairs" under "Structural Steel" may sound reasonable, but are likely to cause no end of trouble to some one. The main items will include such things as General Conditions, Excavation and Filling, Concrete, Brick Masonry, Terra Cotta, Structural Steel, Light Iron, etc.

These main items being in their proper places and all accounted for, the next thing is a standard arrangement of secondary topics to be used in the same order, as far as possible, under each item. Probably each division will start with "In General" or some like heading, which will contain a brief description of work included. This is a place where the three C's usually need to be emphasized, especially conciseness. After "In General" will follow, perhaps, Materials, Workmanship and Methods, Details of Construction. The items

under these headings will be further subdivided, as for example, "Forms" under

#### WORKMANSHIP AND METHODS.

##### Forms.

- 1a Material.
  - b May be omitted in some places.
  - c If wood to be planed.
- 2a To be constructed rigidly and accurately.
  - b To be tight.
- 3a Time of removal.
- 4a Cleaning.
- 5a Fillets required in some cases.

The man who is charged with working out the details of one of the main items may well stick to headings until he has one for each paragraph. With a completed outline any one familiar with a subject can fill in the paragraphs if he will keep in mind the three C's.

Proper coordination of topics can only be obtained by study of a complete outline; it may be lost in the assembled text. To have the arrangement of a specification indicate, perhaps, that "Materials" and "Skylight Curb" are of coordinate importance, is extremely confusing.

Having completed a standard specification, the question next arises: What will be the most convenient form in which to use it? It must, of course, be such that it can be turned over to the stenographer or printer with the least possible work. For the synthetic method each paragraph will be typed on a card with a proper index number. The paragraph outline may be duplicated as a guide for arrangement, and perhaps as an order blank for paragraphs. For the analytic method, the whole standard with notes will be printed. It is convenient to divide this large standard into separately bound chapters, each including one main subject. This avoids the necessity for crossing out entire sections, such as the entire steel specification for a job which has no structural steel. If the pages of these chapters be separately numbered thus: General Conditions A1, A2, A3, etc., Excavation and Filling B1, B2, B3, etc., each chapter may be treated independently without confusion of numbers.

Typography offers difficulties in the matter of clear arrangement. The relative importance of items must be indicated in the text as clearly as possible. Printed specifications offer unlimited opportunity for distinction in headings by varying the size and kind of type. Architectural specifications, however, are usually reproduced by some method which limits the typography to that of the typewriter. Clear distinction is more difficult in this case, but is still possible.

There are also minor points in specification writing which are sometimes neglected. A few still specify in detail the requirements for materials, like cement, when The American Society for Testing Materials has standard specification for most

materials, which are difficult to improve and can be included by name in a few words. All specification writers should be familiar with these specifications. Some specify under general conditions that all materials shall be the best obtainable, and then specifically contradict the statement from time to time. Not a few are prone to the lazy man's refuge "shall be satisfactory to the architect." A contract at law is, among other things, an agreement to do a definite thing. There is always the possibility that a court would not hold the unknown thought in the back of an architect's head to be a "definite thing."

Making a specification stronger than will be enforced often detracts from one otherwise good. Specifying wrought iron when soft steel will be accepted, or sherardizing when galvanizing will be accepted, weakens the whole specification.

When the specification is complete, the question of indexing arises. Very commonly there is given a "Table of Contents," for which responsibility is usually, and often wisely, disclaimed by the writer. An index is much more useful and, if rightly done, entails no more work. With a standard alphabetical list of items it is not difficult to fill in page numbers for those which should be included and cross out the others. If the list is double spaced, it is also easy to add the occasional special item.

A consideration that may seem extraneous to the subject, and is indeed foreign to many specifications, is good English.

Mead\* says, "In the preparation of specifications there is no more important matter than the use of good English." It must be remembered that, aside from the legal viewpoint, the foreman on the job must understand the specification if he is to follow it. One of Boston's famous literary men said, "Of course, the ordinary reader does not perceive delicate shades of expression or fine distinctions of phrase. Very likely he does not pause to consider whether a style is good or bad; certainly he would be unable to analyze its merits if he attempted this. It does not follow that these graces do not touch him. It is by means of them that deep and lasting effects are produced. Certainly if a writer desires to impress or persuade," if he has a specification he wishes followed, "he cannot too carefully cultivate the art of communicating it."

If more specification writers will follow this advice, who knows but what some one will some time write a specification so interesting that some one else will read it. And when this comes to pass for the contractor and architect, verily the millennium will be near.

\* "Contracts, Specifications and Engineering Relations." — DANIEL W. MEAD.



## EDITORIAL COMMENT

**A**N interesting development of 1919 in New York is the culmination of the efforts of the "Save New York Committee"—a body of merchants interested in maintaining the character of Fifth avenue and vicinity, which has been seriously threatened by the coming of clothing manufacturing shops into the side streets. A group of clothing manufacturers have now effected a co-operative organization to build new loft buildings for the industry in the Pennsylvania Station district, where land is cheaper and rents will naturally be lower. Land has been acquired on Seventh avenue from 36th to 38th streets, running back 300 feet from the avenue. The buildings now projected will provide 1,400,000 square feet of floor space and the initial cost of the first units is estimated at \$15,000,000. The average rental will be 50 cents per foot as compared with \$2.50, the price the manufacturers are at present paying. This will have two results: a lessening in the cost of clothing and the removal of the crowds of clothing workers who swarm Fifth avenue to the detriment of the retail stores. The seriousness of the situation that has been existing may be realized when it is known that there are 2,190 shops between 14th and 48th streets adjacent to Fifth avenue, out of a total number of 3,312 for the entire city, employing in all 79,667 workers.

This movement is commendable as far as it goes, but it only indicates the greater benefits that would come to manufacturer, employee and city if only a little more foresight and imagination had been employed in meeting the problem, and its promoters gone the whole way and removed the industry from the heart of the city entirely. Manufacturing enterprises in the center of a large metropolis are no longer essential to its business welfare; in fact, as in the case of New York, they have proved to react to its detriment. The tremendous congestion that is engulfing the transportation systems of our cities, the narrow margin of time which is allowed for the carrying of food supplies to the urban population, and the constantly diminishing supply of sunshine and fresh air, make it most important that every means should be taken to prevent increasing such congestion. Instead of concentrating industrial establishments in commercial districts already crowded, the effort should be to create separate and independent manufacturing communities with space for their various supplementary activities.

While there may be an apparent temporary advantage in New York in moving the clothing manufacturers from the vicinity of Fifth avenue to a cheaper and less intensively developed sec-

tion, the ultimate result is that the area of congestion is simply removed to another part of the city. These large loft buildings which are being erected will be a nucleus of another group of buildings which will house many thousands of workers, and the streets on which the buildings front will in turn become fully as crowded as Fifth avenue, and offer just as serious obstructions to traffic.

The workers will still have to travel the same or greater distances from their homes in the outlying sections of New York, or they must crowd themselves into living quarters on the west side, which are old and fast falling into disrepair, and in which there are neither adequate air nor sanitary conveniences, so that eventually a congested area will be created that will in future years bring up a new problem.

Only a little more intensive analysis would suggest a permanent solution of the difficulty. Industrial workers are being forced to go farther and farther beyond the city to find living quarters where rents will be commensurate with their earnings. Instead of placing the burden on the transportation companies to bring these people to the city each day, the industries themselves should move to the outlying districts where they will be near their source of labor. The facilities for receiving and shipping freight are now, in many cases, fully developed on the outskirts of cities, and where additional service is needed, it can more readily be supplied than in the congested center. Ground space is obtainable at a much lower figure, increase in plant capacity can be made with greater ease, the advantages of light and sunshine can be enjoyed to the utmost, and opportunities for wholesome and strength building recreation can be made available to the employees when it is once realized that manufacturing belongs in the open spaces surrounding our cities rather than in the center of its commercial activity. From the humanitarian point of view, the advantages are no less than from the purely business aspect. The workers will have the opportunity to enjoy greater time for the cultivation of home life and the exercise of their natural instinct to grow fruits and flowers,—time which is now consumed in uncomfortable traveling,—their food can be supplied them at a lower cost and with less danger of lack of supply through some emergency, and there will result, as a natural consequence, a more contented and unwarped view of their station in life which it is not difficult to perceive present industrial conditions well-nigh make impossible.





## How to be sure of a 20-Year roof—

**T**HE West Technical High School, Cleveland, Ohio, pictured above, has just been re-roofed with a Barrett Specification Roof over another type of roof that had begun to deteriorate seriously after only seven years of service.

When the Barrett Specification Roof was finished we handed the City Officials of Cleveland a Surety Bond, issued by the well-known United States Fidelity & Guaranty Co., of Baltimore, which *guarantees* the roof to last for at least 20 years without maintenance expense of any kind. The probabilities are that this roof will last nearer 30 years.

There is only one way to be absolutely sure of getting the kind of roof you want—a genuine Barrett Specification Roof—and that is to write this standard paragraph into the building specifications:

"The roof shall be laid according to the Barrett Specification dated May 1, 1916, and the contractors shall obtain for us, without additional cost, the Barrett 20-Year Guaranty Bond."

This simple paragraph takes all the gamble and worry out of roofing, for both owner and architect.

Such expressions as "Barrett Specification type of roof," "Five-ply felt-and-pitch roof" or "Barrett Specification Roof, or equal," should never be permitted in a building specification.

### The 20-Year Surety Bond Is Free

The 20-Year Surety Bond will be furnished on any roof of 50 squares or over, in cities of 25,000 or over, or in smaller places where Barrett Inspection Service is available. There is no charge for this Bond. Our only requirements are that the Barrett Specification shall be strictly followed and that the roofing contractor shall be approved by us.

*A copy of the Barrett 20-Year Specification, with roofing diagrams, sent free on request.*

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# Manufacturers' Catalogs and Business Announcements

## ANNOUNCEMENTS

Neil Gardner announces the removal of his office from 1341 North Second street, Abilene, Tex., to 302 P. & Q. Realty Building, Ranger, Tex., for the practice of architecture. Manufacturers' samples and catalogs requested.

The Ohio Board of Administration, Columbus, Ohio, announces the reorganization of their architectural department under the direction of Mr. Kyle W. Armstrong, architect, with offices at Oak and Ninth streets. Manufacturers' samples and catalogs requested.

W. V. Marshall, formerly of the firm of McIver, Cohagen & Marshall, Billings, Mont., announces the opening of an office for the general practice of architecture at Room 204, First National Bank Building, Missoula, Mont.

Mr. B. Hammett Seabury, Besse Building, Springfield, Mass., announces that on Jan. 1, 1920, Harry M. Seabury and J. Lewis Kelley became members of the firm of the B. Hammett Seabury Co.

Mr. Charles R. Kaufman announces the opening of offices at 127½ Main avenue N., Twin Falls, Ida., for the practice of architecture and is desirous of receiving manufacturers' samples and catalogs.

Mr. James E. Casale, architect, announces the removal of his offices from 569 Fifth avenue to temporary offices at 128 East 28th street. After May 1, 1920, he will be permanently located at 73 East 52d street, New York City.

The firm of Hoppin & Koen, architects, 4 East 43d street, New York City, take pleasure in announcing the admission of Mr. A. D. R. Sullivant as an associate member on Jan. 1, 1920.

Messrs. George W. Backoff, George Elwood Jones and J. Frederick Cook announce the co-partnership for the general practice of architecture under the firm name of Backoff-Jones & Cook, with offices in the Union Building, 9-15 Clinton street, Newark, N. J.

Mr. James E. McLaughlin takes pleasure in announcing that he has taken into partnership Mr. G. Houston Burr, Jan. 1, 1920, and will continue the practice of architecture under the firm name of McLaughlin & Burr, with offices at 88 Tremont street, Boston, Mass.

Mr. Abram R. Rutan has opened offices for the general practice of architecture in the Second National Bank Building, Paterson, N. J. Manufacturers' samples and catalogs requested.

Messrs. William J. Todd and Harry T. Miller, architects and engineers, announce the opening of an office at 213 Masonic Building, Phoenix, Ariz., and are desirous of obtaining manufacturers' samples and catalogs.

Mr. A. A. Baerresen announces that Mr. Fred-eric Hutchinson Porter of Salem, Mass., is a partner in the new firm of Baerresen & Porter, with offices at 1821 Carey avenue, Cheyenne, Wyo. Catalogs requested.

Mr. Glenn Allen, architect and manager of construction, announces the removal of his office to The Georges Company Building, corner of Market and Aurora streets, Stockton, Calif.

## BOOK REVIEW

**USEFUL DATA on Reinforced Concrete Building for the Designer and Estimator.** By the Engineering Staff of the Corrugated Bar Company of Buffalo, N. Y. 216 pages with charts and illustrations. 5 by 8 inches. Leather bound. Price, \$2.50.

This book, just issued by the Corrugated Bar Company, gives every indication of being of much value to architects and engineers. It will take its place beside the hand books of the steel companies and will undoubtedly be as frequently consulted since concrete now takes such a prominent place in the designs of to-day. Its principal value, undoubtedly, will be to those who have some knowledge of concrete design, and by the use of the tables and charts there presented, preliminary designs and estimates can undoubtedly be more readily made than from any other hand book as yet published. It will also be of aid to the beginner in the use of some of the tables, but it can in no wise be considered a text book.

By the use of this book one can readily compare the type of girder and beam construction and also obtain much information relative to the flat slab.

This hand book will also be very useful in the checking up of designs in a preliminary way. It is not too technical in its explanation and still the information contained is presented in such a way as to be of great value. The customary tables on properties of sections are presented in a very practical and concise manner.

The tables on beam loading and moments, with the graphic illustrations, will be of great assistance to architects and engineers, and the resume of the building law requirements, together with the weights of material and storage warehouse notes, will greatly assist in the design of industrial structures.

The general information contained is valuable and is tabulated in a well chosen manner, so that the architect and engineer may readily find data usually discovered only after some search.